DOCUMENT RESUME

ED 250 362 TM 840 671

AUTHOR Teddlie, Charles; And Others
TITLE Louisiana School Effectiveness Study: Phase Two, 1982-84.
INSTITUTION Louisiana State Dept. of Education, Baton Rouge. Bureau of Research.
SPONS AGENCY Southeastern Regional Council for Educational Improvement, Research Triangle Park, N.C.
PUB DATE 84
NOTE 293p.; Small print in tables. For a summary of this report, see TM 840 670.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC12 Plus Postage.
DESCRIPTORS *Academic Achievement; Analysis of Variance; Educational Attainment; *Educational Environment; Elementary Education; Elementary School Teachers; Expectation; Factor Analysis; Grade 3; Grades (Scholastic); Parent Influence; *Performance Factors; Principals; Regression (Statistics); *School Effectiveness; *Socioeconomic Status; *State Surveys; Student Attitudes
IDENTIFIERS Educational Development Series; Louisiana Basic Skills Test; *Louisiana School Effectiveness Study

ABSTRACT

This report details the methodology and findings of the Louisiana School Effectiveness study, designed to identify school level attitudes and behaviors which predict students' achievement. Principals, teachers, and students in 76 schools with third grade classrooms responded to school climate questionnaires. Data for the students also included scores on the Louisiana Basic Skills Tests, scores on the Educational Development series test, and student socioeconomic (SES) characteristics. Data analyses were divided into two distinct efforts: (1) an input-output model designed to predict student achievement from student SES and school climate, and (2) a description of six different types of schools (three level of effectiveness x two levels of SES). Factor analysis followed by regression analysis indicated that there were four significant contributors to the variance in test scores: student SES, student perceptions of how much the teachers and other students care about grades, students' future educational expectations, and student perceptions of negative school climate. Recommendations for school improvement included school level recommendations, and state level recommendations. (BW)

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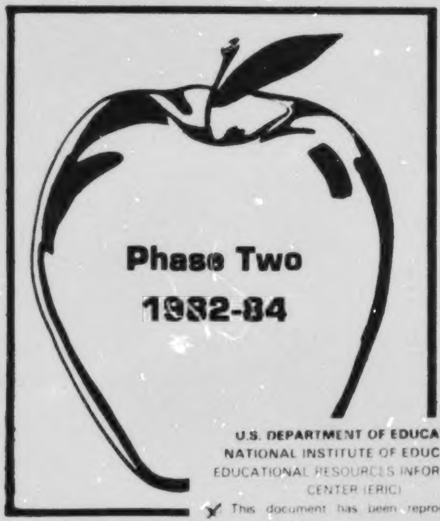

Phase Two

1982-84

TM 840 671

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Partial funding for the Louisiana School Effectiveness Study was provided by the Southeastern Regional Council for Educational Improvement.

This public document was published at a cost of $1835.54. 200 copies of this public document were published in this first printing at a cost of $710.54. The total cost of printings of this document, including reprints is $1835.54. This document was published by the Louisiana Department of Education, Bureau of Research, to disseminate information regarding school effectiveness under authority of R.S. 17:24.4. This material was printed in accordance with the standards for printing by state agencies established pursuant to R.S. 43:31.

LOUISIANA SCHOOL EFFECTIVENESS STUDY:

PHASE TWO

1982-84

Prepared by:

Charles Teddlie
Louisiana State Department of Education

Carolyn Falkowski
Louisiana State Department of Education

Sam Stringfield
Tulane University

Stephanie Desselle
Louisiana State Department of Education

Robert Garvue
Louisiana State Department of Education

Issued By
Louisiana State Department of Education
Thomas G. Clausen, State Superintendent

ACKNOWLEDGMENTS

The Louisiana School Effectiveness Study is a cooperative venture that requires the efforts of people in the education community at all levels --Louisiana State Department of Education (LDE), local school districts, schools, and universities. Starting at the LDE level, a special thanks goes to Dr. Hugh Peck, former associate superintendent for Research and Development, who created the research climate necessary to cultivate this research. The staff of the Bureau of Accountability, in particular Dr. Craig Mills, provided data from the state testing programs and offered advice and assistance in data analysis. Dr. Earl Ingram and Dr. Joe Hinton have been instrumental in continuing the project.

The superintendents and central office staffs of the 12 districts participating in Phase Two of the study played a major role in its successful completion. These 12 districts- Bossier, Caddo, East Baton Rouge, Jefferson, Lincoln, Monroe, Morehouse, Ouachita, Rapides, St. Martin, Tangipahoa, and Vermilion--recognized the importance of determining why some schools are more effective than others in educating their students. We thank them for their cooperation and foresight. A special thanks goes to Superintendent Walter Lee of Caddo Parish, which participated in both Phase One and Phase Two.

We thank the faculties and students of the 76 elementary schools included in the study. We gathered data in these schools from the principals, more than 250 teachers, and more than 5,400 students. Their cooperation was the essential element in the study. Special thanks go to the staffs at Boyce, Breaux Bridge, Lecompte, and St. Martinville Elementary schools, at which our case studies were conducted.

The cooperation of Tulane and Louisiana State Universities was also strategic to the effort. The Department of Sociology at LSU and the Department of Education at Tulane provided staff that were of great benefit to the project. Dr. Bill Falk of LSU and Dr. Bob Wimpelberg of Tulane made contributions to the project.

Funds provided by the Southeastern Regional Council for Educational Improvement helped us in many ways. We thank Dr. Dan Carr of Northwestern State University, Dr. Rick Ginsberg of the University of New Orleans, Dr. Richard Lomax of LSU, and Ms. Imogene Pliner of PAR for serving on the research committee that oversees the project.

We acknowledge the interviewers who worked with us so diligently - Ms. Vicky Lewis, Ms. Helen Cordes, and Ms. Geri Patrick. Ms. Karen Soniat was very helpful in editing parts of the text, designing the cover for the report, and assisting in dissemination. Special thanks go to Ms. Ruby Marchand and Ms. Betty Alexander, who cheerfully and thoughtfully prepared the text and helped in dataset construction.

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CHAPTER ONE

EXECUTIVE SUMMARY

I. Introduction

This report summarizes the findings of Phase Two of the Louisiana School Effectiveness Study (LSES). The results can be summarized very simply: schools make a large difference in student achievement in Louisiana beyond the effect of the socioeconomic characteristics of students in those schools. Results further indicate that some schools are performing well beyond expectations. Other schools are less productive. If the citizens of Louisiana are to enjoy the productivity and prosperity that is within their potential, many public schools are going to have to increase substantially their effectiveness in educating young people.

The first goal of the LSES is to identify school level attitudes and behaviors which predict students' achievement. A longer-term goal of the study is to find ways to help local schools and school systems alter their professional staffs' attitudes and behaviors in ways which both increase their professional staffs' job satisfaction and increase students' achievement.

The goals of the study are ambitious; the message of the literature clear. Schools must strive to succeed and be effective. This report documents the progress that the LSES has made toward the first goal, identifying stable school level predictors of student achievement.

II. Design

Seventy-six schools with third grade classrooms were involved in Phase Two of the LSES. These 76 schools were selected using a stratified random sample design to be representative of the schools in the 12 districts in which they were located. The schools were visited between January and March 1983.

Altogether, school climate questionnaires were administered to 74 principals, more than 250 teachers, and some 5,400 third grade students. Data for the students also included (1) scores on the Louisiana Basic Skills Tests (BST), (2) scores on the Educational Development Series (EDS), lower primary level test, and (3) student socioeconomic characteristics (SES) gathered from the BST.

Data analyses were divided into two distinct efforts: (1) an input-output model designed to predict student achievement from student SES and school educational climate, and (2) a description of six different types of effective and ineffective schools. Case studies were conducted in four schools. These four studies will provide information to be used in the design for Phase Three of the LSES.

III. Results

This section summarizes the major results from Chapters Five and Six of this report.

A. Factor and Regression Analyses

The researchers collected data from a number of sources, including questionnaires administered to principals, teachers, and students. This resulted in a very large number of variables to be considered. In order to reduce these data into manageable dimensions, a number of factor analyses were conducted.

Students' parents' socioeconomic status (SES), school composition variables, and variables from each of the questionnaires were subjected to separate factor analyses. From the data on students' SES and school composition, two factors emerged which were significantly related to student achievement as measured by the EDS. These were students' SES and percentage of student body and teachers who are white.

From the data on the students' questionnaires, 10 factors emerged. Four of these (students' future educational expectations, students' perception of negative school climate, students' perceptions of teachers' work and push, and students' perception of how much the teachers and other students care about grades) were shown to be significantly related to achievement scores.

Analysis of the teachers' instruments yielded 21 different factors. Of the first 10 factors, two proved to be strongly related to student achievement. These were the teachers' expectations that their students would attend college and the teachers' perceptions of their students' academic ability.

The data from the principals' questionnaires were reduced to 17 factors. Of the 10 strongest, four were significantly correlated with student achievement scores. The four were principals' future expectations for the students, the principals' perceptions of the schools' success and students' academic abilities, how much the principal works with his/her teachers, and the principals' perceptions of parental support for education.

Therefore, 12 factors from these data bases were significantly correlated with student achievement. These factors were then put into a regression analysis to determine their relative strengths. This analysis indicated that there were four significant contributors to the variance in test scores (students' SES, students' perceptions of how much the teachers and other students care about grades, students' future educational expectations, and students' perception of negative school climate). None of the factors from the teachers' or principals' questionnaires were significant contributors. These 12 factors explained 74 percent of the variance in student achievement scores. Understanding these, then, is very important in understanding school effectiveness.

Consideration of the 12 factors described above added a great deal to an understanding of what makes a school effective in Louisiana. To further clarify the data analysis, factor analysis was used again. This time the 12 factors were simplified into four summary factors (called second-order factors).

The first of these is Students' SES. Included in this factor are students' SES, teachers' and principals' expectations for their students' academic performance, and students' perceptions of the amount that their teachers push them academically. The nature of the relationships was that students from high SES homes had principals and teachers who expected substantial future educational achievement from them. Students from low SES homes were more likely to report that their teachers pushed them to succeed.

The next important factor is Current Academic Climate. In this factor are the amount that the principals are involved in academics in the school, the teachers' ratings of their students' ability, the students' assessment of the negativeness of the school climate, and the racial composition of the faculty and the student body. The most important aspect of this factor is that the students who say that the school learning environment is positive (who say that students are not teased for good performance and students are not afraid to work up to their potential) are the students whose teachers rate their students' ability as high.

Student Expectations/Parental Support is the third of these major factors. The important contributors here are the childrens' expectations for the amount of education they will eventually attain and the principals' assessment of the degree of parental support for education.

The last of these second-order factors is School Caring and Success. This factor is composed of the students' perception that the teachers and the students care about grades and the principals' belief that the school is successful. It is likely that the principals' belief filters down to the teachers and students and that the faculty and students' emphasis on performance influences the principal's judgment.

The final analysis in Chapter Five explores the relationship between these four major factors and student achievement. These four factors account for 67 percent of the variance in students' scores. The most important factor is School Caring and Success. Each of these four factors accounted for at least 11 percent of the variance in student achievement and each contributes something unique to our understanding of school effectiveness.

B. Analyses of Variance

A series of analyses were run in which the 76 schools were divided into the following six different groups:

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective		
	Typical		
	Ineffective		

Analyses of variance enabled the investigators to look at the following comparisons: (1) differences between effective, typical, and ineffective schools; (2) differences between high and low SES schools; and (3) differences among the six groups of schools.

These analyses enabled the investigators to construct the following descriptions of the six groups of schools:

(1) High SES, effective schools

(a) Teachers were in frequent contact with parents and perceived parents as being highly concerned with quality education.

(b) Teachers reported having high present and future academic expectations for their students.

(c) Teachers accepted responsibility for students' outcomes and actively worked with students toward the realization of these high expectations. This attitude was reflected in students' reports noting that teachers cared about them and pushed them to achieve academically.

(d) These schools had the highest percentage of teachers teaching third grade exclusively.

(e) The students apparently internalized the high expectations expressed by teachers and parents. Students in high achieving, affluent schools had higher expectations for themselves than did their peers in equally affluent schools with lower achievement. The general climate from the effective, affluent schools was one of concern for excellence from all the major participants--principals, faculty, students and parents.

(2) High SES, typical schools

(a) Compared with teachers in the high SES, effective schools, the teachers in high SES, typical schools took less responsibility for the academic achievement of their students.

(b) Compared with students in the high SES, effective schools, students perceived lower expectations from their teachers and parents; students also perceived less teacher push.

(3) High SES, ineffective schools

(a) Teachers had unrealistically high perceptions of their students' current level of academic achievement; they appeared to base their perceptions on intrinsic student characteristics such as student SES.

(b) Students' future academic expectations are not as high as those of other high SES students.

(c) The principals' academic expectations were lower than those of the teachers.

Principals' actions did not appear to affect changes in these schools. Combining teachers who believe that high achievement generates itself spontaneously with relatively unmotivated students results in underachievement.

(4) Low SES, effective schools

(a) While the principals and teachers had modest long-term expectations for their students' achievement, particularly in regard to higher education, they held firm academic expectations for their students while at their school.

(b) Teachers reported spending more time on reading and math and assigning more homework than either of the other two low SES groups.

(c) Students perceived teachers as pushing them academically. They also reported receiving more help from their teachers than did students in less successful, low SES schools.

(d) Students perceived their teachers as having high expectations for them in their current classrooms.

(e) Teachers reported that principals visited their classrooms frequently.

(f) The teachers in this group were the youngest and least experienced of the low SES groups.

(g) The teachers in this group were the most likely of all the teachers to have teacher's aides.

These less affluent, successful schools had principals who motivated teachers who, in turn, motivated students. The ability to instill in students a belief that they can learn is critical in low SES schools.

(5) Low SES, typical schools

(a) Teachers in this group perceived themselves as having greater influence on student attitudes and held higher future academic expectations for their students compared with other low SES groups.

(b) Parents were viewed by teachers as being more concerned and having higher expectations than other low SES groups.

(c) Students viewed their teachers and parents as having positive perceptions of their school work; students were viewed by teachers as having high expectations for themselves; students viewed their teachers as being less demanding academically and less critical than students did in the low SES, effective schools.

It appears that these positive perceptions, high expectations, and teacher praise coupled with the idea that teaching efforts are of the right kind and amount resulted in a lesser focus on student achievement.

(6) Low SES, ineffective schools

(a) An overall negative academic climate in these schools appears to have contributed to the low achievement of students. Of all the groups, teachers had the lowest expectations for students in their schools and rated them the lowest academically; the teachers accepted little responsibility for and perceived having little influence on student outcomes; they also appeared less satisfied with teaching and perceived themselves as unsuccessful in helping students attain goals. It should be remembered that students in this group are at the same SES level as students in the two previous groups.

(b) Principals rated their students low on achievement.

(c) When compared with students in other low SES groups, students perceived their teachers as less praising, less caring, less helpful, and more critical. Of the six groups, these students reported that their teachers felt learning was the least important.

(d) Principals, teachers, and pupils all perceived the lack of achievement within the schools.

IV. Recommendations

As Murphy and Hallinger (1984) recently pointed out, policy analysis at the school district and school level is becoming increasingly important. Research findings about effective schools is one area of current interest to local districts and schools. The LSES provides policy recommendations and research that it is hoped will be of benefit to Louisiana schools and school districts.

The research team feels strongly that, taken as a group, the recommendations based on the LSES Phase Two results can provide a framework for improvement in many schools. The value to a particular school of any one recommendation will obviously vary depending on the current performance level of the students and staff pertaining to suggested activities. The research team visited some schools that impressed them as being extremely well administered and highly effective. Yet, invariably, the principal expressed the belief that his/her school could improve in some area. The hope is that this report will serve as a catalyst for some changes but it is recommended that effective programs already being implemented not be affected.

Recommendations based on the data from Phase Two of the LSES are presented on three levels: the school, the local system, and the state. Rationales for these recommendations are located in Chapter Seven of the report.

A. School Level Recommendations

Recommendation 1: Principals and teachers should convey a clear, academic mission to students and parents.

Recommendation 2: Principals and teachers should actively elicit parental support and involvement.

Recommendation 3: Principals and teachers should hold high, but realistic expectations for students' achievement.

Recommendation 4: Principals and teachers should allot and use substantial blocks of uninterrupted time for the teaching of reading and math.

Recommendation 5: Schools, with more or less affluent student bodies, need to use somewhat differing strategies to increase student achievement.

Recommendation 6: Teachers and principals need to be made aware of the variables they can control in their schools to affect student achievement.

B. Local System Level Recommendations

Recommendation 7: Principals should have substantial voice in the hiring of teachers in their schools.

Recommendation 8: Local school systems should develop modern, integrated Management Information Systems (MIS).

Recommendation 9: Local systems should continue their progress toward total racial integration of faculties and student bodies.

C. State Level Recommendations

Recommendation 10: Many voices in the educational community are speaking on alternative methods for spending education dollars. School effectiveness research, such as the LSES, can provide evidence for more appropriate ways for spending these state funds. Schools should be rewarded for the following: (a) increases in Average Daily Attendance, (b) student achievement beyond expectation based on student SES, and (c) increases in parental/community involvement.

Recommendation 11: More teacher's aides should be employed, especially at the early elementary levels and in schools in which the students come from low SES backgrounds.

Recommendation 12: Local school systems, schools, principals, and faculties should be provided information on student achievement (Louisiana Basic Skills Tests and State Assessment Tests) at the school level accompanied by a range of predicted scores for the school based on student SES. This will enable the systems, schools, and faculties to know if they have an effective school based on this one criterion.

Recommendation 13: The Louisiana State Department of Education, in conjunction with local systems, should institute an Effective School Recognition Program.

Recommendation 14: The LDE should encourage teachers to participate in workshops and in-service training concerning effective school climate. The LDE should develop materials for these workshops.

V. LSES Past, Present, and Future Activities

This report summarizes the LSES Phase Two (1982-84). An earlier report, available from the Bureau of Research, summarized LSES Phase One (1980-82), which was basically the conceptualization and piloting phase.

During the 1984-85 school year the LSES will examine in greater detail the day-to-day workings of a relatively small number of schools. This will be done in an effort to build a more detailed, qualitative model of how to create and maintain effective school climates.

Beginning in the 1985-86 school year, the research team intends to assist a small number of local schools in building a base for sustained school improvement. Assuming the success of that endeavor, the Louisiana State Department of Education will be able to provide Louisiana school systems with a locally validated, research-based program for systematic school improvement.

Table I.1 summarizes LSES past, present and future activities.

Table I.1

LSES Past, Present, and Future Activities

Phase	Brief Description	Period
Phase One	Conceptualization of Project Overall design Initiation of project Pilot Study Field tested instrument Phase One Report prepared	1980-82
Phase Two	Selected sample of 76 schools Administered school climate questionnaires to 74 principals, 250 teachers, 5,400 students Analyzed data Phase Two Report completed June 1984	1982-84
Phase Three	Compare 8 to 10 matched pairs of schools Derive policy implications for what makes an effective school in Louisiana	1984-85
Phase Four	Change 3 or 4 ineffective schools	1985-86
Future Phases	One strategy would be to institute an Effective Schools Recognition Program Another strategy would be to conduct workshops and in-service training statewide concerning effective school climate The ultimate goal would be the institution of a comprehensive school improvement program in Louisiana	1987 →

CHAPTER TWO

HISTORY OF THE PROJECT

I. Legislative Mandate

Louisiana's first accountability legislation (Louisiana R.S 17:391) enacted during the 1977 regular session, mandated educational accountability at a number of levels. In it, the LDE (see Glossary) is directed to establish standardized tests for use throughout the state, administer these tests, and analyze data collected during these administrations. The LDE has, in fact, developed tests for second, third, and fourth graders in language arts and mathematics. During the 1983-84 school year, the tests for fifth graders were pilot tested. This testing program, however, meets only one requirement of the statute. For research, a more relevant portion of the act is as follows:

> In carrying out the accountability program, the local school boards and the State Department of Education shall identify and define educational variables which may affect learning. These variables shall include, but not be limited to, the physical, intellectual, social, and emotional development of pupils. Educational variables, surveys or studies, shall be conducted by the State Department of Education to assess their relationship to learning. (Louisiana R.S. 17:391.3)

In response to this, the Office of Research of the LDE initiated the LSES (see Glossary). By this action, the LDE became involved in an area of research which has been of great interest particularly since the Coleman report (published in 1966, see Glossary) implied that schools cannot make a substantial difference in student learning beyond the effects of the students' home situation. Since this was contrary to the expectations of most educators, much research has been conducted in this area. Later studies, such as Brookover et al. (1979, see Glossary) and Summers and Wolfe (1977) in which other variables and/or other levels of educational organization were considered, produced much more positive findings. Some of the studies that have influenced and contributed to the LSES will be discussed in the next section of this report.

"Effective" schools may be defined in a number of ways. One could consider the self-concept of the student and define as effective a school which instills a sense of self-worth in the students. One may consider what may be called locus of control and thus define as effective a school which helps students to take responsibility for themselves and their actions. One may argue that an effective school is one in which students' future aspirations are encouraged. In this case, a school in which the students seek higher levels of education would be the effective school. Perhaps the most common definition of an effective school is one in which the students achieve at a high level. It is this definition that the LSES has taken. The LSES is concerned both with the effectiveness of the schools in the state (i.e., how well they do their job of educating their students) and with the effects of the educational process on the students and the faculty involved. In particular, the study seeks to examine schools in Louisiana and discover some of the factors which are significantly related to increased student performance in the basic skills area. The goal of the LDE in this undertaking is to identify variables related to student learning that can be helpful to many schools in the state.

The study has two very exciting aspects. First, it has been conceived as a longitudinal study, lasting at least five years. Second, in the first full year of the project, about which this report is written, data were collected on students, teachers, and principals from each participating school. This process offers the possibility of examining very specific educational questions, even at the classroom level.

How does one evaluate the effectiveness of a school based on student performance? When looking at a number of schools, examining the classroom grades of the students is not reliable. Teachers use different grading criteria in different situations. An "A" from one teacher in a reading class many not mean the same as an "A" from another. The reading grade of "A" may not even mean the same as the mathematics grade of "A" as given by the same teacher. Most researchers, when dealing with measures of student learning, rely upon some consistent measure of student attainment. Thus, the students' score on a standardized test of achievement (most often a test of the basic skills of reading and mathematics) becomes one measure of the effectiveness of the school. In the LSES, three standardized tests formed the basis of comparison among Louisiana schools at various times during the project. In Phase One, which will be briefly discussed later in this chapter, the Louisiana State Assessment Program (LSAP) tests of reading, writing, and mathematics were used. The recently developed Louisiana Basic Skills Test (BST, see Glossary) and the Educational Development Series, lower primary level test (EDS, see Glossary) were used in Phase Two.

This concentration on "cognitive" dimensions of effective schooling, as measured by standardized achievement tests, is not without limitations. Averch et al. (1974), for example, point out that this does not allow consideration of other outcomes of learning such as abstract reasoning and creativity. The reliance of the LSES on such tests is the result of two factors: (1) the tests that were used were the best available measures of student achievement, and (2) the tests responded directly to the mandate of the legislature by permitting an examination of factors related to learning and enabling the LSES to form an integral part of the Louisiana accountability program as a whole.

Other dimensions of school effectiveness are not ignored in the LSES. Selected social-psychological variables such as self-concept and locus of control of both the teachers and the students will be considered in later analyses. A number of types of observation will be carried out during subsequent years. A detailed discussion of the future activities of the LSES is presented in Chapter Seven.

This report is the result of the first data analysis efforts on data from Phase Two of the LSES. Here the researchers were concerned with qualities of the school as a whole which affect achievement. The question is: given schools with students of similar backgrounds and faculties, what distinguishes the successful school from the unsuccessful. How does the successful school make such profitable use of the resources at hand? Particular emphasis was placed on the variables which Glasman and Biniaminov (1981) have termed "policy manipulable," that is, those aspects of schooling which can be altered by a change in educational policy.

A number of different types of variables affecting student learning have been and are being considered in the LSES. Included in these are school and faculty characteristics [such as faculty years of experience and National Teacher Examinations (NTE) scores], student characteristics (such as the teachers' expectations for their students). The major dependent variable (the yardstick upon which "school effectiveness" is measured) is the achievement of the students as measured by either the LSAP, the BST, or a standardized test of student achievement.

II. Phase One Activities

The school year 1981-82 was the pilot year of the project. The Bureau of Research of the LDE worked in conjunction with the Sociology Department of Louisiana State University in designing and implementing this phase of the study. Caddo Parish served as the site for this study. Caddo was selected for two reasons: (1) it had one of the most completely computerized student and personnel data systems in the state; and (2) because of the large number and variety of schools in Caddo Parish, it was reasonable to assume that there are schools in the system which are differentially effective in educating their students.

During the pilot year, many issues were addressed. "School effectiveness" was defined operationally. Data collection instruments were developed and refined. Procedures for administering the questionnaires had to be streamlined. Sources of information on teachers, principals, and students were identified and investigated for completeness and ease of access. Data processing and analysis procedures were put into place.

Much was accomplished during Phase One. Data were collected from several sources: (1) student files provided by Caddo parish, (2) personnel files from Caddo, (3) personnel information from the Bureau of Elementary and Secondary Education of the Louisiana State Department of Education, and (4) data from the LSAP including socioeconomic characteristics of the students and test scores provided by the Bureau of Accountability of the LDE. All information was from the 1980-81 school year, with the test scores from the spring 1981 administration of the LSAP. Forty-one data elements were collected for each school in Caddo parish which included at least one third, seventh, or tenth grade class. These data included teacher characteristics (such as highest degree attained and years of teaching experience), principal characteristics (such as total experience as a principal and NTE administrators test score if available), student characteristics (such as the student's mother's and father's education and occupation and the percentage of the student body that is white), and other school characteristics (such as the student/teacher ratio). Dependent variables (those that the researchers are trying to explain or predict) included the reading, writing, and mathematics tests of the LSAP.

Schools were divided into three groups based upon student performance on the LSAP. Schools were sorted into categories dependent upon whether their scores were above, at, or below the scores that were predicted for them. This procedure was carried out separately for the third, seventh, and tenth grades included in the study.

The researchers then calculated means for selected variables from the study in an effort to compare the various groups of schools. (See Table II.1.) When the comparisons by performance were examined, a clear pattern emerged. Schools in which the students scored above the parish mean had, when compared with the other two groups of schools, higher parental socioeconomic status. They also had teachers with more preparation and experience. Schools in which students scored below the parish average had just the opposite characteristics. Schools in which students scored approximately at the parish average lay somewhere in between on almost all the characteristics, with any differences from this pattern being quite small and insignificant.

When school scores were compared with the scores predicted (based on SES, see Glossary) for their students, the picture was very different. Instead of finding a clear distinction among the groups of schools, researchers found that the three groups of schools as now defined looked very much the same. (See Table II.2.) There was, for example, very little difference among the schools in mothers' or fathers' education and occupation or in the percentage of white students in the groups. The difference in National Teacher Examinations scores (NTE, see Glossary) was the largest difference among the groups and that was only 10 points. At first glance, this lack of discernible pattern may seem perplexing, but it actually gave great hope. The researchers concluded that given similar inputs, schools do yield different outcomes. Thus, despite the gloomy pronouncements of early school effects research (such as Coleman's famous study of the 1960s), schools can and do make a difference in the academic performance of their students independent of socioeconomic status.

Table II.1

Statistical Means of All Variables in Relation to the Parish's Average Score on State Assessment Tests, Caddo Third Grade Schools

	Above Average	Equal to Average	Below Average
Number of Schools	7	29	9
Mothers' Ed. Level[*]	4.26	3.81	3.74
Fathers' Ed. Level[*]	4.31	3.83	3.73
Number of Siblings	2.64	3.10	3.40
Percentage of Fathers Who Are Professionals	40%	18%	07%
Percentage of Mothers Who Are Not Professionals	21%	32%	49%
Percentage of Students Who Are Black	25%	50%	94%
Faculty's Average Score on NTE Commons	564.39	544.35	534.99
Faculty's Average Score on NTE Area	613.13	587.35	586.71
Percentage of Faculty that Is White	61%	52%	43%
Average Number of Faculty Absences (in days/year)	7.28	7.64	8.62
Mean Total Faculty Experience (in years)	11.04	10.04	10.01
Average Highest Degree Faculty Received[*]	2.75	2.62	2.63
Average Passing rate on NTE[**] of Institutions Faculty Attended	2.03	2.07	2.25
Number of Students	404.57	507.79	463.00
Student Teacher Ratio	26.59	24.19	23.07

[*] For mothers' and fathers' education, 3 = attended high school, 4 = graduated from high school. For average highest degree of faculty, 2 = bachelor's degree, 3 = master's degree.

[**] For average passing rate on the NTE (based upon where faculty members received their bachelor's degrees): 1 = highest passing rate, 3 = lowest passing rate.

Table II.2

Statistical Means of All Variables in Relation to Predicted State Assessment Scores, Caddo Third Grade Schools

	Above Predicted	Approximately As Predicted	Below Predicted
Number of Schools	10	26	9
Mothers' Ed. Level[*]	3.80	3.94	3.72
Fathers' Ed. Level[*]	3.85	3.95	3.75
Number of Siblings	3.16	3.01	3.25
Percentage of Fathers Who Are Professionals	15%	23%	13%
Percentage of Mothers Who Are Not Professionals	35%	31%	37%
Percentage of Students Who Are Black	62%	49%	63%
Faculty's Average Score on NTE Commons	542.05	546.19	547.84
Faculty's Average Score on NTE Area	585.94	595.32	585.31
Percentage of Faculty that Is White	49%	53%	50%
Average Number of Faculty Absences (days/year)	8.29	7.59	7.76
Mean Total Faculty Experience (in years)	9.58	10.54	9.86
Average Highest Degree Faculty Received[*]	2.63	2.66	2.62
Average Passing Rate on NTE[**] of Institutions Faculty Attended	2.14	2.10	2.06
Number of Students	423.60	530.42	410.89
Student Teacher Ratio	24.54	24.55	23.49

[*] For mothers' and fathers' education, 3 = attended high school, 4 = graduated from high school. For average highest degree of faculty, 2 = bachelor's degree, 3 = master's degree.

[**] For average passing rate on the NTE (based upon where faculty members received their bachelor's degrees): 1 = highest passing rate, 3 = lowest passing rate.

After the analyses described above, the researchers began a sophisticated series of regression analyses (see Glossary). These regression models enabled the researchers to estimate the contribution to student achievement made by each of the variables being considered. The results of these analyses will be discussed later in this chapter and can be found, in much greater detail, in the report of Phase One activities.

In another part of Phase One, the scores of the third grade students on the language arts, mathematics, and reading tests from each school were compared with the scores that were predicted from the SES of the parents. Ten schools which scored significantly above or below prediction were selected for further study. Questionnaires for principals, teachers, and third grade students were adapted from those used by Wilbur Brookover et al. (1979) in their study of fourth graders in Michigan. A variety of opinions and attitudes about the schooling situation were examined with these instruments. Questions were asked about the expectations for students' future educational attainment, their present educational performance, the emphasis on academic performance evident in the classroom, and the commitment of the students to learning. Students' perceptions were compared with the faculty's responses for similar questions. Other items delved into the principals' and teachers' commitment to and contentment with the academic situation. These questionnaires, after being pretested in two schools in Iberia parish, were administered in the third grades of the 10 selected schools in Caddo parish. The goal of this phase of the study was to explain variance in student performance on the LSAP beyond that explained by the information from the central office files. It was hoped that variables which could be controlled or modified by policy would be found to be related to student achievement (R.S. 17:391).

The primary data portion of this phase of the study presented some difficulties. For example, during collection of the questionnaire data, it was apparent that some of the questions being asked of the students were beyond their ability to respond. Some questions sought information that the children did not know and some were confusingly worded. All of the problems identified by the researchers were carefully analyzed in planning the next phase of the study.

Since the study in subsequent years will focus on the third grade as a study population, (see Glossary) the results from the Phase One activities which will be discussed are concentrated in that grade. Further information about the seventh and tenth grades is available in the Phase One report. The original list of variables was cut down to 15 variables for the third grade and 17 for the other grades. Some variables that were highly correlated with other variables were eliminated, since they would have obscured the results of the regression. For the third grade regression models, the socioeconomic variables that were included were fathers' education, percentage of mothers who were not professionals, number of siblings, percentage of black students in the school, and the percentage of fathers who were professionals. The school variables considered were the mean commons score on the NTE, the mean teacher absences in the school, the student teacher ratio, the number of students in the school, the mean NTE area score, the percentage of white faculty, the mean teachers' salary, the mean faculty experience in the school, the principal's percentile score on the NTE administrator's test, the mean faculty highest degree attained, and the mean passing rate on the NTE.

When all 15 variables were considered in the third grade model, the amount of variance explained was 32 percent for the mathematics test scores, 54 percent for the reading test scores, and 47 percent of the writing scores. When the model was reduced to the best six variable models (see Table II.3 for a list of these), the amount of variance explained was 46 percent for mathematics, 64 percent for reading, and 59 percent for writing.

A stepwise regression (see Glossary) estimated the separate effects of socioeconomic and school variables. Since socioeconomic factors occur first in a child's life--they are born into a family with certain characteristics--these variables are usually entered into the equation first. This is what was done in the LSES. When the school variables were then entered, it was possible to estimate how much of the variance in test scores was due to the selected school characteristics alone and not shared with the socioeconomic variables. Adding the school characteristics into the full model contributed between 3 and 11 percent to the variance explained. For the reduced six variable model, an additional 3 to 12 percent is contributed. It is encouraging that school variables can be shown to contribute something unique to the academic achievement of the students. Unfortunately, it was difficult to decide which school variables were responsible for the effect. In an effort to clarify this, a factor analysis (see Glossary) was conducted on the variables included in the full regression equation. The purpose was to sort out the highly intercorrelated variables, and the procedure resulted in four factors (see Glossary). Factor one comprised all the socioeconomic variables and one school variable (the percentage of the faculty that is white). Factor two contained faculty characteristics such as mean faculty salary. Variables related to teacher preparation made up factor three. Finally, factor four contained only one variable--the principal's percentile score on the NTE Administrator's test. (See Table II.4.)

When school variables alone were considered in a factor analysis, three factors resulted. These were very similar to those found earlier. In a final step, these school factors were entered into a regression model in an attempt to predict student LSAP scores. The first two factors (teacher preparation and teacher experience) are much more likely to be related to student achievement, at least as measured by the LSAP mathematics, reading, and writing tests, than the third factor (principal's NTE test score).

Table II.3

Variables Retained in Reduced Six Variable Multiple Regression Model, Third Grade Schools Only

Test	Socioeconomic Variables	School Variables
Mathematics	Father's Education Percentage of Mothers Who Are Not Professionals	Mean Faculty Score on NTE Commons Exam Mean Number of Faculty Absences Student Teacher Ratio Number of Students in School
Reading	Father's Education Number of Siblings Percentage of Mothers Who Are Not Professionals Percentage of Students Who Are Black	Mean Faculty Score on NTE Area Exam Number of Students in School
Writing	Number of Siblings Percentage of Fathers Who Are Professional Percentage of Students Who Are Black	Mean Faculty Score on NTE Commons Exam Mean Faculty Score on NTE Area Exam Number of Students in School

Table II.4

Rotated Factor Matrix,* School and Socioeconomic Variables, All Three Grades Combined

Variables	Factors			
	1	2	3	4
Father's Education	(-.81)	.17	.17	.10
Number of Siblings	(.78)	.39	-.07	-.19
Percentage of Mothers Who Are not Professional	(.76)	-.09	-.18	.40
Percentage of Fathers Who Are Professional	(-.79)	.24	.31	-.13
Percentage of Student Body That Is Black	(.86)	-.08	-.23	.22
Percentage of Faculty That Is White	(-.66)	-.06	.52	-.20
Mean Faculty Score on NTE Commons Exam	-.23	.11	(.91)	-.06
Mean Faculty Score on NTE Area Exam	-.19	-.34	(.83)	.05
Mean Faculty Absences	.52	-.32	.05	.47
Mean Faculty Salary	.05	(.85)	-.09	.17
Mean Faculty Experience in School	-.08	(.80)	-.08	.13
Number of Students in School	.01	(.78)	.04	-.19
Student-Teacher Ratio	-.07	(.80)	-.02	-.14
Principal's Percentile Score on NTE Administration Test	-.10	-.16	.19	(-.78)
Mean Highest Degree Attained by Faculty	-.20	(.72)	.07	.09
Mean Passing Rate on NTE of Universities Faculty Attended**	.28	-.09	(-.71)	.36

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* This factor analysis employed the principal axis technique, with factoring stopping at eigenvalues less than 1.00. The factor loadings reported here are based on a varimax rotation of the unrotated factor matrix.

** These data were based on the following: (a) where the faculty members received their bachelor's degrees, and (b) the percentage of graduates from that institution who passed the NTE. Values of one, two, or three were assigned to these universities. A value of one indicates the highest passing rate on the NTE; a value of three indicates the lowest passing rate on the NTE.

A. Significant Predicted Score Main Effects (See Glossary.)

Predicted score on the LSAP accounts for significant differences in 11 of the variables on the students' questionnaire. Differences in this group may be due to differences in the socioeconomic background of the students in the different groups, since students from schools predicted to perform well tend to have better educated fathers, more fathers who are professionals, and are less likely to be black than those from school predicted to do poorly. In brief, those students in schools predicted to do well tend not only to perceive higher expectations from their parents and peers, but also to feel more responsible for their own school performance.

Students from the lower group reported a stronger push from their teachers than did students from the higher group. They indicate, also, that their teachers have comparatively higher expectations for them. The researchers suspect here that these students' teachers are consciously, and more verbally, encouraging them to achieve at a higher level than might be expected. The lower group of students also reported a more structured classroom environment (being assigned a permanent seat in the classroom) than did the other group.

Students from the schools predicted to score poorly indicated that they have internalized their teachers' encouragements when they reported that they think they are very likely to continue to work hard even if the work was not graded. These same students are more likely also to report that more students tease those who do well in school. This provides a picture of students who, although trying to fulfill their teachers' expectations, feel an inability to earn the tangible symbols of academic success--good grades.

B. Significant Actual Score Main Effects

Children from schools scoring more highly reported a higher educational expectation and a greater sense of control over the academic situation. These perceptions are likely the result of the children's relatively greater success in the academic world. Since the socioeconomic status of this group of students does not appreciably differ from that of the students actually scoring poorly, these differences can be ascribed to school climate.

Students from schools which performed poorly were more likely to report that their teachers encourage them to try for better grades than were students from schools which did well. This is likely due to teachers in the better schools not feeling the need to offer encouragement to their students. In class structure, students in the lower performing group report that they are required to keep the same seat in class and that their teacher is more likely to work with the class as a whole.

As might be expected, children from schools doing poorly think that they do their school work more poorly than do children from the other group. They also think that they learn less in their schools and enjoy reading less.

C. Significant Interaction Effects

The interaction effects (see Glossary) that were apparent from this analysis are more complex than can adequately be dealt with here. In general, however, an overall pattern emerged in which schools which scored consistently with their predicted score (for example, schools which were predicted to do well and, in fact, did well on the LSAP) responded similarly and those schools which were inconsistent with their predicted performance also responded similarly. In schools in which students perform at expected levels, students are more likely to feel personal control over their situation while in schools where students did not live up to expectations, students are more likely to feel that factors beyond their control explain their performance. Students in inconsistent schools report more teacher push in school work, a higher teacher expectation for their performance, and a more structured classroom environment when compared with the consistent schools. They also report a larger number of classmates doing below their capability because of a fear of being teased and report more classmates teasing students for good performance.

It must be remembered that the results discussed briefly above are from a pilot study of limited scope and generalizability. They must, therefore, be considered as, at best, indicative of the situation in specific schools in a specific parish. The findings were certainly rich enough to encourage the researchers to proceed with the second phase of the project.

III. Phase Two Activities

Phase Two of the project occupied the 1982-83 school year. During this year, the main goal was to further examine factors related to student achievement. Again the major dependent variable (see Glossary) was the school's mean achievement test score. Two tests were used: the BST and the EDS developed by Scholastic Testing Service.

There were, as in Phase One, two data collection and analysis efforts: a primary and a secondary data study. Again, regression analyses were performed on data collected from central offices, and analyses of variance were conducted on information collected with questionnaires. During this year, the regression models designed earlier were further refined and restricted to third grade only. Questionnaire data were collected from third graders, their teachers, and their principals. These regression models used information collected from the districts (such as highest degree attained by the faculty, number of years teaching experience of the faculty, and NTE commons scores) to predict the students scores on the BSTs. These variables were selected because they were shown to be related to student achievement in the pilot year study. Since the report on this phase of the study will occupy the majority of this document, only a brief discussion of its contribution to the history of the LSES will be discussed here.

This year, LDE personnel were joined by members of the Tulane Department of Education. The study was enlarged from one district to 12. These districts were chosen from various parts of the state based upon three criteria: (1) the availability of at least some data on faculty NTE scores prior to the statewide implementation of the NTE in 1976, (2) the availability of other information concerning the teachers and principals, and (3) the willingness of the central office and the particular schools involved to participate. The districts which participated in the study were Bossier, Caddo, East Baton Rouge, Jefferson, Lincoln, Morehouse, Monroe, Ouachita, Rapides, St. Martin, Tangipahoa, and Vermilion.

Perhaps the most exciting aspect of this phase is the inclusion of 76 schools from the 12 districts in a detailed study of the relationship between school climate (the attitudes, expectations, etc. of faculty and students) and student achievement, as measured by both the BST and the EDS. Schools were visited between January and March 1982. The questionnaires that were developed and pretested earlier were administered, in their revised form, to principals, teachers, and students in the participating schools. The EDS was also administered to all third grade students in the participating schools who were present on the day the school was visited. One very important advantage of this study is that the EDS and the questionnaires were all administered by employees of the LDE. This allows great confidence in the consistency measurement across classrooms and schools. For example, the students in each class were read the same instructions when taking the achievement test. Similar examples were used when the questionnaires were given. This consistency is often lacking in studies of this magnitude.

A number of statistical analyses were conducted on the responses to these instruments. Responses were compared with other responses on the same questionnaire, responses on other questionnaires and to achievement test scores. Student, teacher, and principal questionnaires were subjected to individual factor analyses, and sets of variables which were conceptually related were derived from each. These sets of variables (or factors) were then used in regression equations in an attempt to explain the students' scores on either the BST or the EDS. Further, these factors were analyzed in another factor analysis to produce second order factors--that is, sets of factors which are conceptually related. These second order factors were then also put into regression equations with test scores.

Schools were divided into groups based upon the socioeconomic status of their students. Schools were further divided into groups in which the students scored better than was predicted, at prediction, or poorer than prediction on BSTs. This enabled the researchers to form a two-by-three matrix (giving six groups of schools, e.g. one group containing schools of high socioeconomic status where students did better than was predicted). Differences in responses among these six groups of schools were investigated using an analysis of variance (see Glossary) technique. Explanation of this response to the mandate of the Legislature forms the bulk of this report.

IV. Future Activities of the Project

In the future, the research team plans to continue to expand the LSES. The activities of Phase Two supplied a rich database with information collected from the participants with paper and pencil measures. While this is extremely important, it is not the only way to examine school effectiveness. During Phase Three of the project, which will occur during the 1984-85 school year, the LSES will concentrate on direct observation. Instead of viewing education as an input-output model (children from particular backgrounds enter schools with given characteristics and this results in certain outcomes), during Phase Three, increased attention will be focused on the process of education.

Eight to 10 pairs of schools will be selected for study. Each pair will consist of two schools with similar socioeconomic and school characteristics, yet different levels of achievement. In-depth observations will be conducted to examine differences in faculty and student behaviors (such as the amount of time spent in actual instruction--time on task) which might contribute to increased student learning.

This phase of the study will be carried out by the Bureau of Research of the LDE with assistance from the Department of Education at Tulane University. It is projected that schools included in the study will be visited for three to five days at a time at least three times during the 1984-85 school year. During these visits, principals, teachers, and staff members will be interviewed and classes will be observed. Other places of observation will include the hallways, cafeteria, and library. It is hoped that the outcome of this research will be specific recommendations that could be followed in efforts to increase student achievement at the elementary school level.

This research will be greatly aided by a $25,000 grant from the Southeastern Regional Council for Educational Improvement. This grant, which is renewable for at least one additional year, will permit a larger number of schools to be included in the study. It will also permit the researchers to spend more time engaged in field work than would have otherwise been the case.

In fulfillment of the requirements of the granting agency, a state coordinating committee was formed, consisting of one member each from the Departments of Education of the University of New Orleans, Louisiana State University, and Northwestern Louisiana State University and a representative of the Public Affairs Research Council of Louisiana. This committee will aid in the research by reviewing results of the previous years and offering consultation on the 1984-85 school year and beyond. The LSES, it should be recalled, is a longitudinal study of at least five years' duration.

For planning the future of the LSES, a report produced by Dr. William W. Falk of the L.S.U. Sociology Department offered many insights. His suggested agenda for research, commissioned by the Bureau of Research of the LDE, is being adopted in several ways. First, as suggested, more emphasis will be placed in the principal as a force in the educational process in the school. In addition, time-on-task (teaching style and organization) will be a major focus. The suggestion which was most instrumental in the planning of the 1984-85 research was the one to spend more time in the schools, in ethnographic kinds of research.

One other suggestion made in this report is already being implemented and will continue to be. Since one of the most compelling reasons for the LSES is the dissemination of information regarding school effectiveness, a great deal of LDE staff time was spent in presenting the results of the pilot study in Caddo Parish to local Caddo school personnel, LDE personnel, and the Legislature. This will, of course, continue. In addition, information has been and will continue to be shared with professional educators through articles in professional journals and presentations at meetings such as the American Educational Research Association.

CHAPTER THREE

RELEVANT LITERATURE

I. Introduction

The LSES has been guided by research that has preceded it. In this chapter, a summary of the school effectiveness literature will be presented. This review is focused on those studies most relevant to the LSES.

Many authors have correctly argued that school effects research was, in large measure, a reaction to the Coleman (1966) study. Gilbert Austin (1979) explained:

> Coleman is not saying schools don't make a difference. His report indicates that if you compare children who have had no schooling, schooling has a great and important effect at all socioeconomic levels. His writing indicates that when you look for differences in the effect of schooling between schools, it is difficult to identify school-related variables that account for the observed differences. (p. 11)

The differences in the Coleman study, were attributed largely to students' background factors such as socioeconomic status and race.

That conclusion spawned criticism, replication, and an in-depth examination of the factors possibly related to student achievement. The ensuing research has taken many forms: case studies, faculty interviews, student questionnaires, etc. Researchers focused on different levels of analysis. Some (like Rosenthal and Jacobsen, 1968, in their famous Pygmalion in the Classroom) looked at the individual student. At the other extreme, Bidwell (1975) concentrated on district level variables.

The researchers do not desire to engage in a debate over the proper methodology or level of analysis for this type of research but believe that many different perspectives possess some merit. The concentration here is on research at the school level, for that is the level of the LSES. The search is for school factors that helped to explain differences in student achievement scores. This is not to deny that there are classroom variables of great importance. The next phase of the LSES will include an in-depth study at the classroom level. School level factors were merely the starting point of the investigation.

In the LSES, the research effort reexamined some of the structural variables studied by others. Thus, in this chapter some of the findings related to school structure and faculty and student background characteristics will be discussed. Next, some of the research that guided thinking about procedural differences among schools (homework policies, time-on-task, etc.) will be presented. Finally, prior research on a number of social-psychological variables--teachers' expectations, students' locus of control, etc. will be explored. Discussion will concentrate on findings at the elementary school level and upon regular education. Further, the discussion will be confined to studies in which "effective" schools were defined in cognitive terms--i.e., increased student achievement.

Justification for the use of cognitive measures at the school level is provided by Wellisch et al. in their 1978 study of 22 elementary school participating in the Emergency School Aid Act (ESAA). They examined achievement data on the various grades in the ESAA for each school and defined as successful those schools in which "at least two grades gained in national percentile standing in one of the two subject areas and (2) at least one grade gained in the other area." This is very important because the participating schools were also divided into high and low socioeconomic status and racial composition. Based upon their work, they concluded that "differences in school success in raising student achievement cannot be accounted for by student background, since successful and nonsuccessful schools were not significantly different in SES and percent minority enrollment." In short, there are "school" effects to be found.

Bidwell and Kasarda (1980) make an important distinction. "School," they say "is an organization that conducts instruction," while "schooling" is "the process through which instruction occurs." We begin with a brief look at "structural" and "background" factors of the school and its participants and then move to the process of schooling.

II. Background and School Variables

A number of background factors related to schools have been studied. For the most part, these variables have not been shown to be related to student achievement. For example, Rutter et al. (1979) came to that conclusion about the size of the school and the age of the building. The finding about the age of the school building was also reported by Weber (1971). However, Rutter et al. (1979) did find that the state of repair of the school and classrooms was related to achievement. The Phi Delta Kappa (1980) review of school effectiveness studies concurred in that conclusion.

Several school characteristics related to faculty have been examined. McDill and Rigsby (1973) were unable to link achievement and teachers' salary. Hanushek (1970) in his study of California schools, found no relationship between school effectiveness and teacher education. Bidwell and Kasarda (1975) did find a positive relationship when they defined education as the percentage of the school's faculty possessing a master's degree.

In a consideration of student background variables, the most important is socioeconomic status. Whether defined as parental occupational status, parental education status, or family income, socioeconomic status has almost universally shown to be very highly related to student achievement. This has been the case in Coleman's (1966), Equality of Educational Opportunity, through Jencks et al. (1972) reanalysis of Coleman data to the present. Levin (1970) found this positive relationship between SES (see Glossary) and achievement when he used both education and occupation statuses.

This linking of SES and achievement has produced a debate among people involved in school effectiveness research. Ron Edmonds (1979) argues that we need to get away from the idea that the child's background is the major factor in learning basic skills if we are going to reform our schools for the urban poor. Ralph and Fennessey (1983) argue in response:

> To repudiate an established relationship between family background and schooling simply because it conflicts with one's goals is neither pragmatically productive nor intellectually respectable behavior. (p. 689)

III. School Process Variables

In this section, some aspects of what Bidwell and Kasarda (1980) call "schooling" are considered. Rutter et al. (1979) found positive relationships between both frequent assignment of homework and the display of children's work in the classrooms and schools. They also reported higher achievement in schools in which the teachers worked with their classes as a whole and did not divide them into small groups. It should be remembered here that Rutter was looking at students in the British secondary schools who were approximately 14 years of age. Glenn and McLean (1981) found that in effective school the teachers helped to set the learning goals for their students. Benbow (1980) agrees that schools with a clearly defined academic sense of purpose produce higher student achievement.

Much has been written about the importance of time-on-task. Bloom (1974) is a major proponent of the idea that increased time spent on academics produces increased achievement. Stallings (1980) found this relationship in her research. Wiley and Harnischferger (1974) also came to this conclusion when they defined academic time as the amount of time spent in instruction, as measured in hours per academic year.

The principalship has been an active and fruitful area of school effectiveness research. Bossert et al. (1982) and Shoemaker and Fraser (1981) provide useful review articles on this topic. The principal's active leadership in the school is one of the most commonly cited factors. It has been linked to student achievement both in case studies (for example, Weber, 1971) and in outlier studies (such as Austin's 1978 study of 30 outlier Maryland schools). Brookover and Lezotte (1979) found that in the schools in their study termed "improving" the principal was seen to be an effective instructional leader. Venesky and Winfield (1980) in their Delaware-based research referred to this as "achievement oriented leadership."

Wellisch et al. (1978) pointed to the effective principal's involvement in emphasizing achievement by setting performance standards for the students. The New York State Study (1974) done by the Office of Education Performance Review and Lipham (1981) both related increased student achievement to the principal's visibility in the school--specifically his/her informal observation of classrooms.

IV. School Climate Variables

School climate is defined by Brookover et al. (1978) as "a school's academic norms, expectations, and beliefs." They say, further, that this climate, although related to the social composition of the student body, is not synonymous with it. Anderson, in her excellent 1982 review of school climate literature, points out a number of other issues about school climate that researchers agree upon. First, they agree that such climate exists; second, that differences in the climates of various schools are complex and difficult to measure; third, that many types of student outcomes (not just cognitive ones but also affective behavior, values, and personal growth) are affected by the school's climate; and fourth that understanding school climate will contribute to the understanding and prediction of student behaviors.

Many researchers have considered school climate. One of the most important studies is reported in the 1969 McDill, Rigsby, and Myers and the 1973 McDill and Rigsby pieces. This study of high school climate is significant in its own right, but also because it strongly influenced work by people such as Brookover. The McDill et al. research was conducted in 20 public high school in various cities across the United States. The researchers found a number of school climate factors associated with student achievement. Among these factors are Academic emulation (the value placed on excellence in academics); intellectualismaestheticism (the value placed on the acquisition of knowledge); and an academically oriented student status system (social rewards for academic excellence). These factors, as well as others, have been examined by researchers in school climate and many have been found to be related to school effectiveness.

Student and faculty expectations are an often explored area of school climate. Principal's expectations for both teachers and students were found to be positively related to student achievement by Austin (1978) in Maryland schools. Principals' expectations were the most frequently reported significant variables in the case studies reviewed by the Phi Delta Kappa study (1980).

They were also frequently cited in the effective urban school studies reviewed by Phi Delta Kappa.

Teachers' expectations for their students were also often explored. Glenn and McLean (1981), Rutter et al. (1979), Brookover and Schnieder (1975) and Brookover et al. (1979) all connect high expectations and high (or at least improved) student achievement. Weil et al. (1984) compared effective and "typical" schools and found that in effective schools, teachers, parents, and children all held, perceived, and reported higher expectations for student achievement.

Good (1981) offers an explanation for the effect of teachers' expectations when he argues that teachers often treat low achievers differently from high achievers. If the children see this differential treatment, it may reinforce their actions, efforts, and beliefs about themselves.

Related to this is teachers' emphasis on academic performance. High expectations translate into a push by teachers for student improvement. The relationship between this push and school effectiveness has been noted by Weber (1971), McDill and Rigsby (1973), Brookover et al. (1978), Brookover and Lezotte, (1979) and the Phi Delta Kappa review of 1980.

Students' social psychological variables have not been ignored. Some of those studied are clearly climate-related. The rest were if not climate variables, at least strongly influenced by climate. Coleman's work in 1960's foreshadowed this when he found that the student's sense of futility about academic matters was strongly (and negatively) related to student achievement. This, incidentally, was one of the few social-psychological variables he looked at. The effect of this variable was again reported in 1975 by Brookover and Schneider and has continued to be explained in subsequent research.

Crandall, Katkovsky, and Crandall (1965) examined another school-based social-psychological variable when they looked at student locus of control in academic matters. They found that, at least for girls, a positive locus of control (a feeling of responsibility for positive outcomes) is associated with higher reading, mathematics, and language achievement test scores among elementary school students.

Expectations of academic performance have been shown to be related to effective schooling for students. This relationship has been demonstrated by a number of researchers, including Weber (1971), Brookover and Lezotte (1979), and Brookover et al. (1979). It was a prominent variable extracted from other research reviewed by the Phi Delta Kappa Study of 1980.

V. Brookover's 1979 School Effectiveness Study

The single study most influential in the formation of the LSES was the work carried out by Brookover et al. which was presented in their 1979 book: School Social Systems and Student Achievement: Schools Can Make a Difference. This study was conducted in Michigan: 68 schools in a state sample; 61 of these schools in a majority white sample; and a black sample with the seven majority black schools and an additional 23 majority black schools. Data regarding fourth and fifth grade students was obtained from 1) Michigan School Assessment Report, 2) student questionnaires, 3) teacher questionnaires, and 4) principal questionnaires. The Assessment report provided not only student test scores but also average teachers' salary, student body composition, and the number of professionals per thousand students.

Questions were combined to form indicators of parental involvement, differentiation among student programs, classroom organization, time allocation, and staff satisfaction. Factor analysis was used to combine school climate variables into a smaller number of factors. The dependent variables were student achievement scores, student self-concept of academic ability, and student self-reliance.

The findings from this study were many. They found that, when entered into a regression model first, student SES is a major predictor of student achievement. However, when entered after school climate variables it adds only about 5 percent to the variable explained. In all three samples, the most important school climate variable is student sense of academic futility. This factor included items such as "People like me will never do well in school even though we try hard." Also shown to be important were the students' perceptions of expectations placed upon them for present school performance and the teachers' perceptions of the future educational attainment of their students. Students perceptions of expectations placed upon them for present school performance were assessed with two factors: "perceived present evaluation and expectations" and "perception of teacher push and norms." The former factor included questions such as "Would your teacher say you can do school work better, the same, or poorer than other people your age?" The latter contained questions such as "Of the teachers that you know in this school, how many tell students to try hard to do better on tests?" The teachers' perceptions for the students future was examined with the factor "Ability, evaluations, expectations and quality of education for college." One of the items on this factor was, "How many of the students in your class are capable of getting A's and B's?"

While there were some methodological and analytical shortcomings to this study, the LSES borrowed much from it. The questionnaires were adapted for use in Louisiana. A similar cognitive dependent variable was used. The data analysis employed by Brookover et al. served as a starting point for the LSES analyses. In fact, many of the LSES conclusions replicate those of Brookover et al.

VI. School Effectiveness Projects in State Departments of Education

Louisiana is by no means alone in its concern with effective schooling. Many other states have now or have had school effectiveness projects. These studies range from reviews of the literature to intervention programs designed to increase the effectiveness of a school or group of schools.

Alaska commissioned a task force on effective schooling. This governor's task force did an extensive review of the literature. North Carolina's school effectiveness study was an analysis of "statistical information routinely collected from local school systems." With this data, originally collected for other uses, North Carolina's researchers conducted a regression analysis.

Other states have or have had more extensive programs. The New York State effort, for instance, had three distinct parts. First the Department of Education conducted a regression study which included factors at least partially under its control. Second, the Department commissioned a study which compared high and low outlying schools in a more in-depth analysis. Finally, it commissioned an observation study with 14 of the schools identified by the outlier study as scoring above or below predicted achievement.

The Connecticut Department of Education is involved in a voluntary, school-based project to improve schools. It uses, as its definition of effective schools a definition proposed by Edmonds (1979). According to Connecticut, an effective school is one in which the "proportion of low income children obtaining mastery [of basic skills] is the same as the proportion of middle income children obtaining mastery" (Connecticut Department of Education, 1981). Following an extensive review of the research literature, questionnaires and interview schedules were constructed. The analysis of a school, with these instruments, is carried out by the principal and faculty with the assistance of the State Department. In addition, student achievement data and archival materials (such as student handbooks) are gathered. After the data are presented to the faculty, a school-based planning team is designated to implement changes. The State Department assists here by identifying potential resource people for particular aspects of school improvement.

These are obviously not all, or even a large part, of the school effectiveness projects occurring in the United States. Other states (for example, Arkansas, California, Kentucky, and New Jersey) have been involved in this area. City school systems (e.g., Detroit, Philadelphia, and Milwaukee) have also been active.

Many of these--and we include the Louisiana project here--are following the excellent suggestions for research given by Anderson (1982). She recommends 1) using variables relevant to students as a group, 2) using outliers so that differences are more clear, 3) using stratification (for example, high, middle, and low socioeconomic status), 4) using in-depth observation, 5) conducting longitudinal studies, and 6) using experimental methods.

The report of the first full year of the LSES which follows is the report of a study in which we used relevant variables, stratified by SES and by performance, considered outliers, and built on research we conducted previously. We will continue this longitudinal effort next by doing in-depth observations in pairs of outlying schools and finally, we plan to use the knowledge gained in an experiment to change a group of schools into more effective ones.

CHAPTER FOUR

DESIGN, METHODOLOGY, AND EXPLORATORY ANALYSES

I. Overview

The LSES is a long-term undertaking. It has been conceived as at least a five-year program. This report contains the results of analyses conducted on data collected in 1982-83 during Phase Two of the project. This data analysis was completed during the 1983-84 school year.

The LSES used both the study population of 270 schools with third grades in the 12 selected districts and a 76 school sample drawn by Dr. David L. Bayless of the Research Triangle Institute. This sample, selected from those 270 schools with third grade classes, was drawn with the requirement that the characteristics would be similar enough to the state's to enable extrapolation of the results to the state as a whole. (See Figure IV.1.)

Both primary data (collected by the administration of questionnaires to principals, teachers, and students) and secondary data (collected from central office files and LDE records) were gathered. One of the most significant aspects of the LSES data collection was that all data which were not provided by the central staff of the district were collected by LDE personnel. This afforded greater control over the data than is usually the case in projects of this magnitude.

While the LSES included both quantitative and qualitative methods of assessing school effectiveness, this report is concerned with the quantitative measures. Results of these analyses will be presented in subsequent chapters. The qualitative methods, which were ethnographic observations in four schools from two districts, will be summarized in a later report.

II. Secondary Data

Data were collected from 12 districts (Bossier, Caddo, East Baton Rouge, Jefferson, Lincoln, Monroe, Morehouse, Ouachita, Rapides, St. Martin, Tangipahoa, and Vermilion). Some of these data were gathered from central office files. These included faculty characteristics such as NTE scores and years of teaching or administration experience. A full list of variables collected from the files is presented in Appendix 1.

Caddo, East Baton Rouge, and Jefferson parishes provided data on computer tapes and the other districts provided written information. A few districts required some assistance to gather the information and three parishes (Tangipahoa, St. Martin, and Morehouse) requested data collection forms to be distributed to their faculty. LDE personnel travelled to all districts to

Figure IV.1

Sampling Frame for the LSES Phase One

Universe ---------→	795 Schools in Louisiana with Third Grade Classrooms
Study Population ---------→	270 Schools with Third Grade Classrooms in 12 Districts
Study Sample ---------→	76 Schools Sampled from Study Population

explain and, if necessary, to assist in the collection of this information.

This data collection effort was carried out during the fall and winter of 1982. After that period, a great deal of effort was expended in verifying the data (using LDE files in the Bureaus of Elementary and Secondary Education) and in putting all data into a similar format.

In addition, data were drawn from the BST files. The assistance of the Bureau of Accountability of the LDE was invaluable in this effort. Student demographic characteristics (mothers' and fathers' education, percentage of fathers and mothers who are professionals, and percentage of the student body that is white) were taken from BST answer sheets which had been completed by the third grade teachers. These data for all 12 districts participating were placed in another dataset. It was assumed that the characteristics of the third graders would not differ systematically from those of the school as a whole. Thus, when data were analyzed at the school level, the mean for third graders was used to approximate the school mean.

Since the decision had been made to conduct all analyses at the school level, all data in this secondary analysis was averaged at that level. This procedure was carried out for all data collected during this part of Phase Two of the LSES.

There were several problems encountered during this endeavor. Much emphasis was to be placed on analyses concerning the NTE Commons and Area Scores of the teachers and principals. In fact, the 12 districts were selected, in part, because they had some NTE data prior to the state requirement of 1976. Unfortunately, the districts were not uniform in the distribution of NTE scores. Some districts contained a sizable number of faculty with recorded scores. But overall, an insufficient number of such scores were available for the complex statistical analyses that had been planned.

Some districts, because of differences in recording procedures, had difficulty providing the years of experience a teacher had in the school he/she is teaching in now. They could provide only total experience and district experience.

It was difficult to consider faculty salary data. Some districts included PIPs (professional improvement program) increments and others did not. In a few cases, PIPs was given for some teachers and not for others.

Some districts provided experience data which included the school year in question. Others supplied data form salary files which did not give credit for the present teaching year.

In some cases, more than one set of information was provided for each school. This often presented the problem of matching the teacher's data in one set with data for the same teacher in another. The researchers constructed a data base consisting of teachers who could be verified as being on the faculties of the schools in question during the spring of 1982.

III. Primary Data

Additional data were collected to answer questions that secondary data could not address. The researchers were interested in exploring variables related to increased student achievement, especially educational school climate variables.

A variety of data was collected. Not only did the study include the usual cognitive variables (test scores) but also a variety of social psychological variables such as student expectations, self-concept, and locus of control. These social psychological variables will be viewed both as dependent variables and as independent variables affecting student achievement. The major emphasis of the LSES will be on student achievement in fulfillment of the legislative mandate.

Because of the scope of the data collection in this phase of the study, it was impossible to include all 270 schools in the 12 districts that were in the secondary data analysis. Dr. David L. Bayless, senior statistical scientist with the Research Triangle Institute in North Carolina, was selected to choose a sample for the LSES. See Appendix 2 for a complete report on the sampling procedures used. His major goal was to provide a sample of schools which is as representative of the schools in the 12 districts as possible and in which school achievement levels within these districts are proportionately represented.

The decision was made early in the project to allow each school in a district an equal probability of being selected. Schools were not, therefore, weighted by the number of students enrolled. It was also decided by the LDE to not "oversample" the extremes of the distribution; that is, not to select a disproportionate number of very high and very low achieving schools. The goal, instead, was to produce a sample representative of the achievement levels within each of the study districts.

The sampling frame (see Glossary) for the study was a list of all schools in the 12 districts which had third grade students. This source of data was the 1981-82 school year file of the LDE and the achievement and demographic information of the 1981-82 Louisiana Basic Skills Test at the second grade level. After adjusting for schools which no longer enrolled third graders and for those which added third grades, the final number of eligible schools was 270. Data included were the Department's school code, average educational level of mother (1 = less than 8 years of schooling to 5 = attended college), average language arts scores, and the number of third graders in the school.

It was planned to include 75 schools in the sample. However, two schools were included in the sample because their inclusion was a condition of their district's participation in the LSES. Since one more school from that district was chosen at random, the final sample size was 76 schools. The number of schools included from a district ranged from two schools in Lincoln Parish to 17 schools in East Baton Rouge Parish. This allocation was based on the number of schools with third grades in each district.

Three variables were used by Bayless to stratify the sampling frame: the district of the school, the average educational level of mothers in the school, and the average language arts score of each school. Within each district, schools were first stratified by mother's educational level and within these strata, when the number of schools in the district permitted, by the language arts score. Schools were then randomly chosen from the strata.

Two sets of comparisons were made to evaluate the quality of the sample. Dr. Bayless compared the average number of third graders per school, the average educational level of the mothers, and average language arts score of the state population to those variables from the study population and finally to the selected sample. As can be seen from Table IV.1, the only noticeable difference came in the number of third graders per school. The schools in the study sample are slightly larger than average.

Researchers from the LSES also compared the sample with the study population and the state as a whole. This set of comparisons was done with 1982-83 data from third grade Louisiana Basic Skills Tests. Both language arts and mathematics scores were compared, in addition to a number of demographic and faculty characteristics. As can be seen from Table IV.2, the 12 district study population and the sample both have a mean mother's and father's educational level that is slightly higher than the mean for the state. All other comparisons show remarkably similar characteristics. From this, it may be concluded that the study sample (see Glossary) is representative (at least in the selected variables) both of the study population of all schools with third grades in the 12 districts and of the state population of third grade schools as a whole.

Two measures of student achievement were analyzed as the dependant variable in this phase of the LSES. The BST was one of these. The BST is actually two tests: Language Arts (both reading and writing) and Mathematics. These tests produced by the LDE Bureau of Accountability are a direct response to the mandate of R.S. 17:391. The main characteristics of this program are: (1) it is given to every student in each grade included in the testing program, (2) performance on the test is the main criterion for promotion to the next grade, and (3) state funded compensatory education is required for any student whose score does not meet or exceed the performance standard on the tests. In the spring of 1982, the BSTs were given to the second grade students. Each year a grade level is being added. Thus in 1983 the BST scores were

Table IV.1

Selected Characteristics of Statewide Population, Study Population, and Study Sample: 1981-82 School Year Data

Selected Characteristics	Statewide Population	Study Population	Randomly Selected Sample of Schools	
Number of Schools with Third Grade	795	270	76	
			Unweighted	Weighted
Average Number of Third Graders per School	66.3	68.3	76.3	
Average Educational Level of Mother*	3.7	3.9	3.9	3.9
Average Language Arts Score	93.10	93.69	93.41	93.15

* For mother's educational level: 3 = attended high school; 4 = graduated from high school.

Table IV.2

Selected Characteristics of Statewide Population, Study Population, and Study Sample: 1982-83 School Year Data*

Variable	State	n	Study Population	n	Study Sample	n
Student SES:						
Mothers' Education	2.93	804	3.05	271	3.06	76
Fathers' Education	2.95	801	3.11	271	3.12	76
Percent Mothers Who Are Professionals	44%	798	44%	270	43%	76
Percent Fathers Who Are Professionals	20%	803	25%	271	24%	76
Percent of the Student Body That Is White	56%	805	55%	271	54%	76
BST Performance:						
APC - Language Test	89.86	805	90.18	271	90.02	76
APC - Mathematics Test	88.05	805	88.19	271	87.70	76
Faculty Characteristics:						
Percent of Faculty That Is White	na	na	67%	271	67%	76
Mean Highest Degree of Faculty	na	na	2.63	271	2.61	76
Mean NTE Passing Rate of Faculty's College	na	na	59%	271	58%	76
Mean Total Teaching Experience	na	na	13.58	271	13.22	76
Mean Teaching Experience - Present School	na	na	6.70	265	6.42	74
Mean NTE Commons Score	na	na	557.70	254	558.47	73
Mean Percent of Faculty Taking NTE	na	na	44%	271	47%	76

* For mothers' and fathers' education: 2 = attended high school; 3 = graduated from high school.
For mean highest degree of faculty: 2 = bachelor's degree; 3 = master's degree.

available for the third grade students in the 76 school sample of the LSES. Only those students who were classified as "regular education or "gifted and talented" were included in the study.

The major difficulty with the research use of the BST is its restricted range of scores. It should be remembered that the BST was designed as a test of minimum skills. As such, it is a particular example of a type of test referred to as "criterion-referenced." These tests are developed to measure "...student achievement in terms of a criterion standard" and "thus provide information as to the degree of competence attained by a particular student which is independent of reference to the performance of others" (Glaser, 1971, p. 8). Although obviously appropriate for evaluating student weaknesses, the BST was not designed to be used in any sort of comparative fashion. It is more important here to look at the student's grasp of particular classes or domains of tasks than to look at how that student (or his class) performs relative to others. We observed, as we had predicted, a very limited range of student scores, with the majority of students meeting the cut-off score required for passing. Despite these limitations, we examined BST scores for the students in the LSES in order to tie the project more closely to other portions of the Louisiana accountability program.

Some analyses were done with scores from the BST, but another source of achievement data was also used. The Educational Development Series (EDS), lower primary level (for grades 2 and 3), as developed by Scholastic Testing Service (STS) was given to third graders in the 76 participating schools between January and March 1983. Because the test, as originally designed, was too long for the LSES research agenda, STS was commissioned to develop a special Louisiana edition of the EDS containing half as many questions as the original. All sections of the test were included except the nonverbal reasoning section. Thus, Verbal, Reading, English, and Mathematics tests were given. This special Louisiana edition was developed to be as representative as possible of the test as a whole.

The EDS was designed for use in comparing students. It is a norm-referenced test. As such, it permits evaluation of a student's achievement "...in terms of a comparison between his performance and the performance of other members of the group" (Glaser, 1971, p.9). As Glaser sums it up: "They (NRTs) tell that one student is more or less proficient than another, but do not tell how proficient either of them is with respect to the subject matter involved" (p.9). The EDS and the BST are, therefore, different types of measures designed with different purposes. The BST gives more specific information about each student, and the EDS allows comparisons of groups of students. [For further explanation of the differences between norm-referenced and criterion-referenced tests, see Thorndike 1976).]

It is important to use both of these tests as dependent variables. It was necessary that the dependent variables be highly related to the Louisiana curriculum in order to provide valid measures of "school effects" in Louisiana schools. Since the BSTs were constructed with performance standards taken directly from the Louisiana public school curriculum, they are relevant. The researchers' concern, then, was with the relationship between the curriculum and the EDS.

In fact the EDS was shown to be reasonably similar to both the Louisiana curriculum and the testing program. A study undertaken by the Bureaus of Research and Accountability of the LDE Office of Research and Development compared the BST and EDS instruments. The study included approximately 5,000 third grade students whose BST scores could be matched with their EDS scores. This examination of the construct and decision validity (see Glossary) of the third grade BST led to the conclusion that, although correlations between the tests were low, the BST and the EDS tests identify students in a similar manner. Those students deficient in Mathematics and/or Language Arts achievement who were identified by one of the tests would very likely be so identified by the other. See Appendix 3.

Thus, it appears that the EDS scores, with their wide range of values, are a reasonable measure of student achievement in Louisiana. The use of this test battery meets, as much as possible, the mandate of R.S. 17:391 which called for the identification of factors related to student learning in Louisiana.

Data were also collected with a series of questionnaires developed by the Bureau of Research. Instruments for principals, teachers, and students were designed. The major input into these was the work of Brookover et al. (1979). In his study, faculty and students in three samples of Michigan schools were questioned about their perceptions of the school and its social climate. Many of the items on the LSES instrument were adopted from Brookover. In addition, many additions and changes were made. Several items were inserted into the faculty instruments as a result of discussions with collaborators from the Education Department of Tulane University. Examples of these include the questions concerning the amount of time the principal spends in selected activities, items regarding the priorities of teachers and principal, and inquires about the number of times during a day that class is interrupted by messages, etc.

Items which sought data on the socioeconomic status of the teachers were adapted from two sources. First, McDill and Rigsby (1973) provided a format for requesting the number of years of education completed by the teacher's father and mother and by the teacher him/herself. The occupations of teachers' parents were obtained with questions adapted from the National Longitudinal Study of the High School Class of 1972 (NLS). The NLS format was particularly appropriate since "schoolteacher" was one response option. This allowed the investigators to look at the effect of parental occupation and the respondent's attitudes and expectations.

Ten questions assessing self-concept of the teachers and principals were provided by the work of Morris Rosenberg. Rosenberg's often-used Self-Esteem Scale assesses general self-concept with questions such as "I feel I am a person of worth, on an equal plane with others." The possible responses to these 10 items range from "strongly agree" to "strongly disagree." An additional social-psychological variable was provided by the use of items from the Locus of Control Scale for Teachers designed by Taylor, Sadowski, and Peacher, (1981) which was included in both the teachers' and the principal's instruments. Ten questions were selected from the 20-item scale. These items, which had response options ranging from strongly agree to strongly disagree, tapped the teacher's perception of his/her ability to influence classroom events and student actions and accomplishments.

Two types of questions were added to the students' questionnaires. They were, as on the faculty instruments, measures of self-concept and locus of control. Eight questions were selected (through pretesting in the pilot year) from the Intellectual Achievement Responsibility Questionnaire designed by Crandall, Katkovsky, and Crandall (1965). Included in these were items such as "When you learn something quickly in school, is it usually: a. because you paid close attention, or b. because the teacher explained it clearly?"

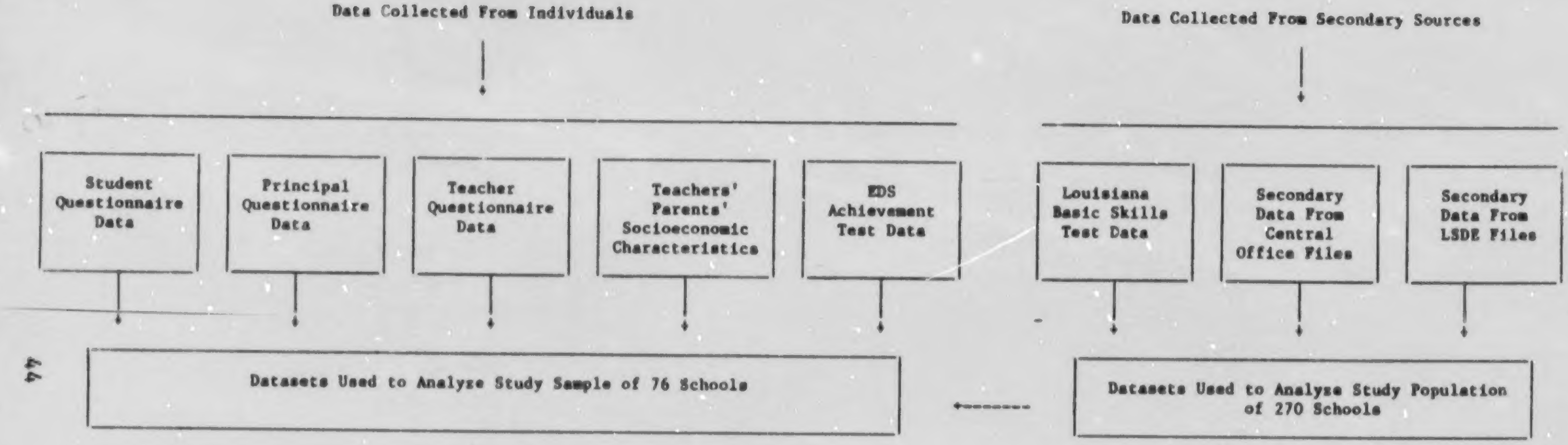
Student self-concept was examined with six questions from Dimensions of Self-Concept, designed by Michael and Smith of the University of Southern California for the Los Angeles Unified School District in 1976. Self-concept specific to the educational situation was measured with questions such as "I like to answer questions in class." Responses ranged from "never or almost never" to "always or almost always" on a three-point scale.

It may be obvious by now, and will certainly be so upon examination of the three questionnaires (See Appendices 4,5,and 6), that a great deal of effort was put in to collecting data which would allow the comparison of faculty perceptions to student perceptions of the same issue. Comparisons were possible between all possible pairs (student-teacher, student-principal, teacher-principal) as well as between different types of schools. This is one of the most important contributions of the LSES, and one which was greatly influenced by Brookover et al. (1979).

A list of all data elements included in the LSES is provided in Appendix 1. This list of variables includes those from secondary sources (such as district central office files), those collected as part of the state's BST program, and those collected by the LSES staff. Many of the variables are available for all 270 schools with third grades located in the 12 study districts; others are available only for the sample of 76 schools. Figure IV.2 summarizes all datasets used in the LSES Phase Two.

Figure IV.2

Summary of Datasets Used in LSES Phase Two


Data Collected From Individuals
Data Collected From Secondary Sources
Student Questionnaire Data
Principal Questionnaire Data
Teacher Questionnaire Data
Teachers' Parents' Socioeconomic Characteristics
EDS Achievement Test Data
Louisiana Basic Skills Test Data
Secondary Data From Central Office Files
Secondary Data From LSDE Files
Datasets Used to Analyze Study Sample of 76 Schools
Datasets Used to Analyze Study Population of 270 Schools

IV. Data Collection

Data for this part of the study were collected by personnel in the LDE Bureau of Research. This afforded more control over the quality of the data than is often the case. Approximately 3½ hours was required to collect all information needed from the students. In smaller schools, a research team would spend either a morning or afternoon in data collection. The team remained for the entire day in the larger schools.

The team first met with the school principal and any faculty members that he/she wished to be party to the meeting. Although a letter had been sent to each principal explaining the LSES, the goals, purposes, and procedures of the study were explained in some detail.

At the conclusion of this meeting, the principal was given his/her questionnaire. The principal was asked to fill it out during the LDE visit to the school. If that was not possible, he/she was requested to forward the completed questionnaire to the Bureau of Research. Following this briefing, each member of the research team went into a third grade classroom. The LSES was explained to each teacher and he/she was given instructions on completing the teacher's questionnaire.

The researchers then requested that the teacher leave the room. This not only allowed time for the teacher to respond to the questionnaire with few interruptions, but also permitted the LDE researcher to have greater control over the research situation. The EDS test was administered first, followed by the opinion questionnaire. The daily schedule of the school was complied with as much as possible so that the children's day was not disturbed. Thus, a portion of the test was given prior to the recess break, and a portion was given after. The length of the EDS and its division into four distinct parts made this relatively easy to do.

Great care was taken to explain the use of computer-readable answer sheets to the students. They were given instructions prior to beginning each section of the test. Care was also taken to allay the children's concerns about the uses of the test. They were told that the EDS was being given to see "how much boys and girls in your school learn," and not to test a particular student. An administrator's manual, designed and produced by Scholastic Testing Service, was used by each test giver. Thus, the same instructions and explanations were given to each class.

After the test papers were collected, questionnaire forms were distributed. Here, the researchers explained that this was an opinion measure and that there were no wrong answers as long as the student expressed what he/she believed. The questionnaires, unlike the tests which required a separate answer sheet, required the respondent to circle the number of the chosen response. Each item and all of its response options were read to the class. It was found that, with this procedure, even the poor readers among the students were able to follow along. Possible student questions and suggested responses were discussed by the research team prior to data collection in order to standardize this portion of the study as much as possible.

Data collection began in Caddo and Bossier parishes during the second week of January 1983. It continued through February and ended the second week in March. The researchers had two goals in this collection process: first, to collect data in as short a time as possible to avoid any differences in responses due only to the passage of time, and second, to finish visiting the schools prior to the administration of the third grade BST tests which were given March 21 through 25, 1983.

Response rates (the percentage of possible respondents providing data to the project) were quite high for every aspect of the LSES. Of the 250 teachers who were included in the LSES, 247 returned questionnaires. This was a response rate of 98.8 percent. Seventy-four of the 76 principals (or 97.4 percent) returned their instruments. There were 5,829 children enrolled in third grades in the selected schools. Of these, 5,389 (or 92.5 percent) responded to the questionnaires and 5,402 (or 92.7 percent) took the EDS test battery. The percentage of enrolled children for whom we have data is very close to the average percentage of students who are present in school on a given day. For comparison, the state average percentage of attendance for 1982-83 was 93.2 percent. Almost all the students present on the day of the visit provided usable information to the LSES.

V. Data Processing

A great deal of time between the end of data collection in March 1983 and the beginning of data analysis in the fall of 1983 was spent in putting all the information into machine readable form. For districts whose central offices provided data on computer tape, smaller datasets had to be drawn with only those people who met the criteria of the study. Many districts provided information in written form. This all had to be keypunched and put into a format which would allow combination with other data in the LSES. The secondary data were organized into 12 datasets (one for each participating district) at the individual faculty member level. Although data analysis was not conducted at this level, there is the possibility for so doing at a later date.

Basic Skills Test results and the socioeconomic data on the students, which was collected as part of the BST were provided to the LSES by the LDE Bureau of Accountability. Only those 270 schools in the 12 participating districts were included.

The researchers opted to consider "school effects"--that is, effects which are related to the school as a whole. Toward this end, all variables in these data files were averaged at the school level and placed in a separate data file.

Primary data (that collected by LSES researchers) was processed in three ways. As part of the contract, Scholastic Testing Service processed the EDS test papers and provided a computer tape with the testing information. Student questionnaires were keypunched outside the the LDE and a tape of these results was provided. Finally, Bureau of Research staff entered all faculty questionnaire data. Again, since the emphasis was at the school level, a data base was constructed with the school means for all the relevant variables.

VI. Plan for Analyzing Data

Analysis of the LSES data commenced with an exploration of the secondary data. Students and faculty of certain characteristics enter school (input) and students of certain achievement leave school (output). What goes on during the day-to-day operations of the school is not considered here. This is perhaps the most "classic" form of school effectiveness research which follows a model laid out by earlier researchers such as Coleman (1966) and Summers and Wolfe (1977).

Characteristics of the students (mothers' education, fathers' education, etc.) and of the teachers (years of teaching experience, highest degree attained, etc.) were considered as inputs. Mean school score on the BST Language Arts and Mathematics tests were considered as outputs. After means were constructed to look at the characteristics of the overall 270 schools, the school means for the included variables were entered into a regression model. The goal here was to explain as much as possible of the variance in student achievement scores when considering certain input variables.

Another set of regression models was developed for the 76 schools where the children took the EDS. The same input variables were used to examine their effect on another measure of achievement. It was assumed that a larger percent of variance explained ($\underline{r}$) would be obtained using this norm referenced test as the dependent variable since the range of scores on it is wider than the range on the criterion referenced BST.

It should be noted that not all the variables originally selected were put into the regression analyses. NTE Area and Commons scores were not included since fewer teachers than expected had scores recorded. Salary data were eliminated since the researchers could not establish with certainty that PIPs salaries were included. Total years of teaching experience was chosen for use over years of experience in the present school since the researchers had more complete data for that variable. One district in particular had difficulty in providing years of teaching in present school. Absences of the faculty was also eliminated from consideration because the researchers lacked complete data. One student variable was eliminated from consideration. Although significantly related to achievement among fourth graders, so few

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third graders were suspended that consideration of suspension data was deemed useless.

In summary, student achievement scores were used as the dependent variable in regression analyses conducted at the school level. Teacher, principal, and student characteristics from the secondary data were entered into the equations as independent variables.

The analysis of the data collected from the central office and LDE files was just the beginning of the exploration of school effectiveness in Louisiana. A substantial amount of other data were collected from principals, teachers of third grades, and third grade students from the 76 schools in the Bayless sample for LSES. Several analyses were conducted using this information.

Schools were divided into groups dependent upon student SES. To do this, the school means for mother's education, father's education, percentage of fathers who are professionals, percentage of mothers who are professionals, and percentage of the student body that is white were factor analyzed. Schools were divided into two groups: high and low socioeconomic status.

The schools were also divided into groups based upon the performance of their students on the BST relative to their predicted performance. Predicted score on the BST for each school was obtained with a regression model developed by the Bureau of Research, which was based upon the model used by the LDE to predict district-wide performance on the BST. After actual school mean attainment on the BST was compared with predicted attainment, schools were assigned to one of three categories: effective schools (those scoring above prediction), typical schools (those scoring at prediction), and ineffective schools (those scoring below prediction).

A number of factor analyses were done on these primary data. Appropriate items from the principal's questionnaires were put into a principal component factor analysis with varimax rotation (see Glossary) using the Statistical Analysis System--SAS--computer program. Before the factor analysis was carried out, self-concept and locus of control items were combined to form four scales (positive self-concept, negative self-concept, internal locus of control, and external locus of control). These scales were used in the factor analysis along with other numeric variables from the instrument. Factors (groups of variables) having eigenvalues (see Glossary) of 1.0 or greater were retained for further consideration. The same procedure was carried out on the student instruments and those of the teachers (after each included item was averaged at the school level). Thus, three sets of factors resulted from this part of the analysis.

Each set of factors (i.e., student, teacher, and principal) was entered into a regression analysis in an effort to predict scores on the BST and the EDS. A series of Pearson product moment correlations (see Glossary) was also calculated to further assess the factors just discussed and the EDS and BST. Although there were a number of possible variables to serve as dependent variable in these analyses, the majority of them were conducted using the school mean basic skills test composite score as constructed by STS.

Two other factor analyses were carried out in this stage of the project. First, variables related to the socioeconomic status of teachers (parents' education and occupation--especially whether the teacher's mother was also a teacher) were drawn from the teachers' questionnaires and put into a principal component factor analysis with varimax rotation. Second, a factor analysis of student and school characteristics was done, producing factors related to students' socioeconomic status, faculty composition, and faculty preparation. Pearson correlations were done with these factors also.

Thus, five distinct sets of factors were produced and correlated with mean school student achievement scores. An examination of the results of these analyses enabled the researchers to select a smaller number of factors which were significantly related to student achievement. This pared down list of factors was then entered into a regression analysis to examine the relative contribution of student, teacher, principal, and school characteristics to the academic achievement of the students.

The researchers also carried out another type of factor analysis. The factors found to be significantly related to student achievement scores were themselves put into a factor analysis. Referred to as "second order factor analysis," this procedure groups the factors along particular dimensions. From this, a number of second order factors (or groups of factors) was produced. These factors were then entered into a regression model in an effort to test their relative contributions to student achievement test scores.

In addition, series of analyses of variance (ANOVAs, see Glossary) were designed to explore the differences among groups of schools. As pointed out earlier, the 76 schools in the study sample were divided two different ways: first, into high and low socioeconomic status schools; and second, into schools scoring above, at, or below prediction. When put into an ANOVA, this allowed for a two by three design, or divided the schools into six groups based upon both the students' SES and their performance on achievement tests. One of the major advantages of the ANOVA technique is that the researcher can look for statistically significant results due to any one of the independent variables (called a "main" effect) or due to the combination of variables (called an "interaction" effect).

A detailed discussion of all analyses is presented subsequently. The remainder of this chapter contains descriptive and correlational results. Chapter Five contains factor and regression analyses, while Chapter Six contains the results of the analyses of variance.

VII. Exploratory Analyses

A. Analyses of Study Population

1. Correlations

Three sets of data were used to analyze the study population of 270 schools: Louisiana Basic Skills Test data, secondary data from district office files, and secondary data from Louisiana State Department of Education files.

The Pearson product-moment correlation coefficients between scores on the Louisiana Basic Skills Tests and secondary school variables are found in Table IV.3. The correlations reported in this table are not particularly large, although some are statistically significant. One potential explanation for the lack of high correlations is the distribution of scores for the Louisiana Basic Skills Tests. Since these tests are criterion-referenced tests, the distribution of scores across schools may not be normally distributed, and this may result in deflated correlation coefficients.

2. Regressions

As indicated in Table IV.4, multiple regression (see Glossary) models using student socioeconomic status variables alone predict 28 to 31 percent of the variance in Louisiana Basic Skills language arts scores. School variables alone (average highest degree attained by faculty, average faculty tenure at the school, etc.) explain 10 to 13 percent of the variance in Louisiana Basic Skills language arts scores. Together the two sets of variables predict 34 to 45 percent of the variance in scores on this test.

3. Factor Analyses

Often variables such as student socioeconomic status are highly correlated. Performing analyses which include several highly correlated variables may result in misleading or confusing findings. Factor analysis may be used to reduce several highly correlated variables into a few underlying factors composed of those many variables. Results of factor analyses of the socioeconomic and school variables in the study population are found in Table IV.5. Four factors emerged. These factors were then used in regression analyses to predict scores on the Louisiana Basic Skills Tests. Results of

Table IV.3

Correlation Coefficients Between Scores on the Louisiana Basic Skills Tests and Secondary School Variables

Variable	All Schools in Study Population		Schools in Study Population in Which at Least 40 Percent of Faculty Had NTE Common Scores	
Average Percent Correct on BST Language Arts Test	*r*	*n*	*r*	*n*
Percent of Faculty That is White	.17**	271	.19*	159
Average NTE Common Examination Score of Faculty	-.05	255	-.11	159
Average Passing Rate on the NTE of Universities that Faculty Attended	.17**	271	.19*	159
Average Highest Degree Attained by Faculty	.04	271	.19*	159
Average Total Experience of Faculty	.01	271	.11	159
Average School Experience of Faculty	.00	266	.12	125

Table IV.3 (Continued)

Variable	All Schools in Study Population		Schools in Study Population in Which at Least 40 Percent of Faculty Had NTE Common Scores	
Average Percent Correct on BST Mathematics Test	r	n	r	n
Percent of Faculty That is White	.00	271	.04	159
Average NTE Common Examination Score of Faculty	-.08	255	-.09	159
Average Passing Rate on the NTE of Universities that Faculty Attended	.04	271	.06	159
Average Highest Degree Attained by Faculty	.06	271	.18*	159
Average Total Experience of Faculty	-.02	271	.03	159
Average School Experience of Faculty	-.07	266	-.06	125

* $p<.05$

** $p<.01$

Table IV.4

Variance in BST Language Arts Scores Explained by Student SES and School Characteristics[1]

	Observations Not Weighted by Number of Students in School		Observations Weighted by Number of Students in School		Including Only Those Weighted Observations in Which at Least 40% of the Faculty Took the NTE Common	
Variables in the Model	Multiple r^2	Adjusted r^2	Multiple r^2	Adjusted r^2	Multiple r^2	Adjusted r^2
Student SES Alone[2]	.28	.26	.31	.30	NA	NA
School Characteristics Alone[3]	.10	.07	.13	.10	NA	NA
Student SES and School Characteristics Together	NA	NA	.34	.31	.45	.41

[1] All of these multiple regression models were statistically significant ($p<.05$ or less).

[2] Student SES variables included mothers' educational level, percent mothers who are professionals, fathers' educational level, percent fathers who are professionals, and percent of the student body that is white.

[3] School characteristics included percent of the faculty that is white, average NTE Common Examination score of faculty, average passing rate on the NTE of the universities that the faculty attended, average highest degree attained by faculty, and average total and school experience of the faculty.

Table IV.5

Factor Analysis of Socioeconomic and School Variables Predicting BST Scores[1]

Variable Name	Factor One Loadings	Factor Two Loadings	Factor Three Loadings	Factor Four Loadings
Mothers' Educational Level	.915			
Percent Mothers Who Are Professionals	.699			
Fathers' Educational Level	.910			
Percent Fathers Who Are Professionals	.879			
Percent of Student Body That Is White		.796		
Percent of Faculty That Is White		.914		
Average Passing Rate on the NTE of the Universities That the Faculty Attended		.756		
Average Total Experience of Faculty			.782	
Average NTE Common Examination Score of Faculty				.949
Average School Experience of Faculty			.859	

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[1] The factor loadings reported here are the result of a varimax rotation.

Table IV.6

Standardized Beta Weights for Reduced Four Factor Multiple Regression Model and Variance in BST Language Arts Scores Explained by This Model

	BST Language Arts Scores
Multiple r^2	.274*
Adjusted r^2	.260
Independent Variables	
Factor One	.341*
Factor Two	.330*
Factor Three	.039
Factor Four	-.198*

* $p < .0001$

these analyses are found in Table IV.6. These simplified four variable models explain 27 percent of the variance in BST language arts scores.

B. Analyses of Study Sample

1. Introduction

While analyses of data obtained from the study population were interesting, they were limited by two considerations: (1) the BST are criterion-referenced tests and have limited research potential compared with norm-referenced tests; and (2) data on school educational climate were not available for those schools in the study population that were not in the study sample.

For these reasons, exploratory analyses of the data collected on the 76 schools sampled were deemed more potentially interesting by the investigators. In fact, two of the exploratory analyses were so intriguing that corollary studies have developed from them. These two studies are (1) a study of the relationship between the BST and the EDS (described in Appendix 3), and (2) a further examination of the relationship between NTE scores of faculty and student achievement (described in Appendix 7).

2. Correlations

Eight sets of data were used to analyze the study sample of 76 schools: student, principal, and teacher questionnaire data; teachers' parents' SES; EDS achievement test data; BST data; and secondary data from district central office and LSDE files. The large number of variables made in-depth correlation analyses too confusing and would generate many Type I statistical errors. For example, simply examining the correlations between items on the student questionnaire alone (46 items) would result in 1,058 simple correlations. It is difficult to make any sense out of such a large number of correlations, so only a few of the more interesting correlations will be discussed in this section. The complete set of correlation matrices are available from the investigators upon request.

Some of the correlations are found in Table IV.7. As expected the correlations among measures of student socioeconomic characteristics are quite high: for example, .938 between students' mothers' education and students' fathers' education. The percentage of students on free lunch programs (as estimated by principals) is more highly correlated with percentage of the

Table IV.7

Selected Correlations Among Variables in Study Sample

	Principals' Estimate of Percentage of Students on Free Lunch Program	Principals' Estimate of Percentage of Parents in PTA	Principals' Estimate of Average Daily Attendance	Mothers' Educational Level	Percentage of Mothers Who Are Professionals	Fathers' Educational Level	Percentage of Fathers Who Are Professionals	Percentage of Student Body That Is White	Percentage of Faculty That Is White	SES Factor Score
Principals' Estimate of Percentage of Students on Free Lunch Program	---	-.19	-.17	-.41***	-.57****	-.38***	-.49****	-.70****	-.44****	-.47****
Principals' Estimate of Percentage of Parents in PTA		---	.40****	.50****	.45****	.56****	.62****	.08	.02	.59****
Principals' Estimate of Average Daily Attendance			---	.44****	.25*	.36**	.41***	.01	-.07	.42***
Mothers' Educational Level				---	.57****	.94****	.79****	.28*	.08	.91****
Percentage of Mothers Who Are Professionals					---	.58****	.71****	.50****	.27*	.75****
Fathers' Educational Level						---	.83****	.30**	.11	.93****
Percentage of Fathers Who Are Professionals							---	.41***	.26*	.89****
Percentage of Student Body That is White								---	.71****	.33**
Percentage of Faculty That is White									---	.06
SES Factor Score										---

* $p < .05$

** $p < .01$

*** $p < .001$

**** $p < .0001$

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student body that is white (-.777) than with any of the other student socioeconomic characteristic data.

Average daily attendance and parental involvement in PTA (as estimated by principals) are significantly correlated with a single measure of student SES derived from a factor analysis to be described in B.4 below. The correlation between ADA (see Glossary) and student SES is .416, while the correlation between participation in PTA and student SES is .594. Neither ADA nor participation in PTA is significantly correlated with percentage of the student body that is black.

The percentage of the student body that is white is more highly correlated (.712) with the percentage of the faculty that is white than it is with any measure of student SES. In our sample of 76 schools, schools in which the percentage of white students was 10 percent or less had 45 percent white teachers. On the other hand, schools in which the percentage of white students was greater than 90 percent had 81 percent white teachers. As the percentage of white students increases, so does the percentage of white teachers.

3. Regressions

In the exploratory analyses on the study population, regressions were run to predict student achievement as measured by BSTs from student SES and school characteristics. In this section, preliminary analyses in which student SES and school characteristics were used to predict STS scores in the study sample will be reported. None of the student, teacher, or principal questionnaire data are included in these exploratory analyses. These models are precursors to the more complete model that will be described in Chapter Five.

As indicated in Table IV.8, a multiple regression model using student socioeconomic status variables alone predicts 57 percent of the variance in scores on the STS. School variables alone (not including school climate data) explain 16 percent of the variance in these scores. Together the two sets of variables predict 68 percent of the variance in scores on the STS.

4. Factor Analyses

Again, the highly correlated nature of the student SES variables led the investigators to perform factor analyses to produce a more parsimonious and easily understood prediction model. Results of the factor analysis of the socioeconomic variables and school characteristic variables in the study sample are found in Table IV.9. Three factors emerged: (1) students'

Table IV.8

Variance in EDS Basic Skills Test Scores Explained by Student SES and School Characteristics[1]

	Observations Not Weighted by Number of Students in School		Observations Weighted by Number of Students in School	
Variables in the Model	Multiple r^2	Adjusted r^2	Multiple r^2	Adjusted r^2
Student SES Alone[2]	.57	.54	.62	.60
School Characteristics Alone[3]	.16	.10	.24	.19
Student SES and School Characteristics Together	.68	.62	.72	.67

[1] All of these multiple regression models were statistically significant ($p<.05$ or less).

[2] Student SES variables included mothers' educational level , percent mothers who are professionals, fathers' educational level, percent fathers who are professionals, and percent of the student body that is white.

[3] School characteristics included percent of the faculty that is white, average NTE Common Examination score of faculty, average passing rate on the NTE of the universities that the faculty attended, average highest degree attained by faculty, and average total experience of the faculty.

Table IV.9

Factor Analysis of Socioeconomic and School Variables Predicting EDS Scores[1]

Variable Name	Factor One Loadings (Students' Parents' SES)	Factor Two Loadings (Faculty's and Students' Race Together With Quality of Faculty's College Education)	Factor Three Loadings (Faculty Experience and Highest Degree Attained)
Mothers' Educational Level	.913		
Percent Mothers Who Are Professionals	.755		
Fathers' Educational Level	.932		
Percent Fathers Who Are Professionals	.893		
Percent of Student Body That Is White		.774	
Percent of Faculty That Is White		.927	
Average Passing Rate on the NTE of the Universities That the Faculty Attended		.857	
Average Highest Degree Attained by Faculty			.731
Average Total Experience of Faculty			.892

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[1] The factor loadings reported here are the result of a varimax rotation.

parents' SES, (2) faculty and student race together with quality of faculty's college education, and (3) faculty experience and highest degree attained. These three factors explain 55 percent of the variance in STS scores. The SES factor by itself explains 47 percent. See Table V.10 for a summary of these regression analyses using factor scores.

Table IV.10

Standardized Beta Weights for Reduced Three Factor Multiple Regression Model and Variance in EDS Basic Skills Test Scores Explained by This Model

	EDS Basic Skills Test Scores
Multiple r^2	.55****
Adjusted r^2	.53
Independent Variables	
Students' Parents' SES	.71****
Faculty and Student Race Together with Quality of Faculty's College Education	.21*
Faculty Experience and Highest Degree Attained	-.01

* $p<.05$

**** $p<.0001$

CHAPTER FIVE

FACTOR AND REGRESSION ANALYSES

I. Plan for Analyzing Data

Numerous interesting relationships emerged from the descriptive and correlational analyses described in Chapter Four. The investigators decided that it was necessary to reduce the large number of data elements from the diverse datasets into a smaller group of variables that could be more easily manipulated and comprehended. A series of factor and regression analyses were conducted.

This process of data reduction started from a large number of variables from a diverse number of datasets. These datasets are described in Figure V.1. Seven different datasets were included in the initial analyses: (1) student questionnaire data, (2) principal questionnaire data, (3) teacher questionnaire data, (4) teachers' parents' socioeconomic characteristics, (5) students' parents' socioeconomic characteristics, (6) school characteristics, and (7) student achievement measured by performance on EDS tests. Each of these datasets was described in Chapter Five.

Five different datasets containing factors emerging from separate factor analyses of the six datasets were then constructed. A dataset containing only those factors significantly related to student achievement was constructed next. Finally, a dataset containing a reduced number of factors from the second order factor analysis was constructed. All of these datasets are diagrammed in Figure V.1.

II. Factor Analysis of Each Dataset

A. Factor Analysis of Student Questionnaire Data Base

The first factor analysis reported here was performed on 33 items from the students' questionnaire. These items were 29 questions from the instrument plus scores on four scales derived from questions on the instrument. The scales were the negative self-concept scale, positive self-concept scale, negative locus of control scale, and positive locus of control scale.

The factor analysis employed was the principal component orthogonal method with varimax rotation. Ten factors with eigenvalues greater than 1.00 emerged. These were (1) students' present education expectation and comparison with others, (2) students' future education expectation, (3) positive school climate, (4) teacher work and push, (5) negative school climate (6) students and teachers care about grades, (7) students work independently and positive locus of control (8) students work hard, (9) negative self image, and

Figure V.1

Datasets Used in Factor and Regression Analysis

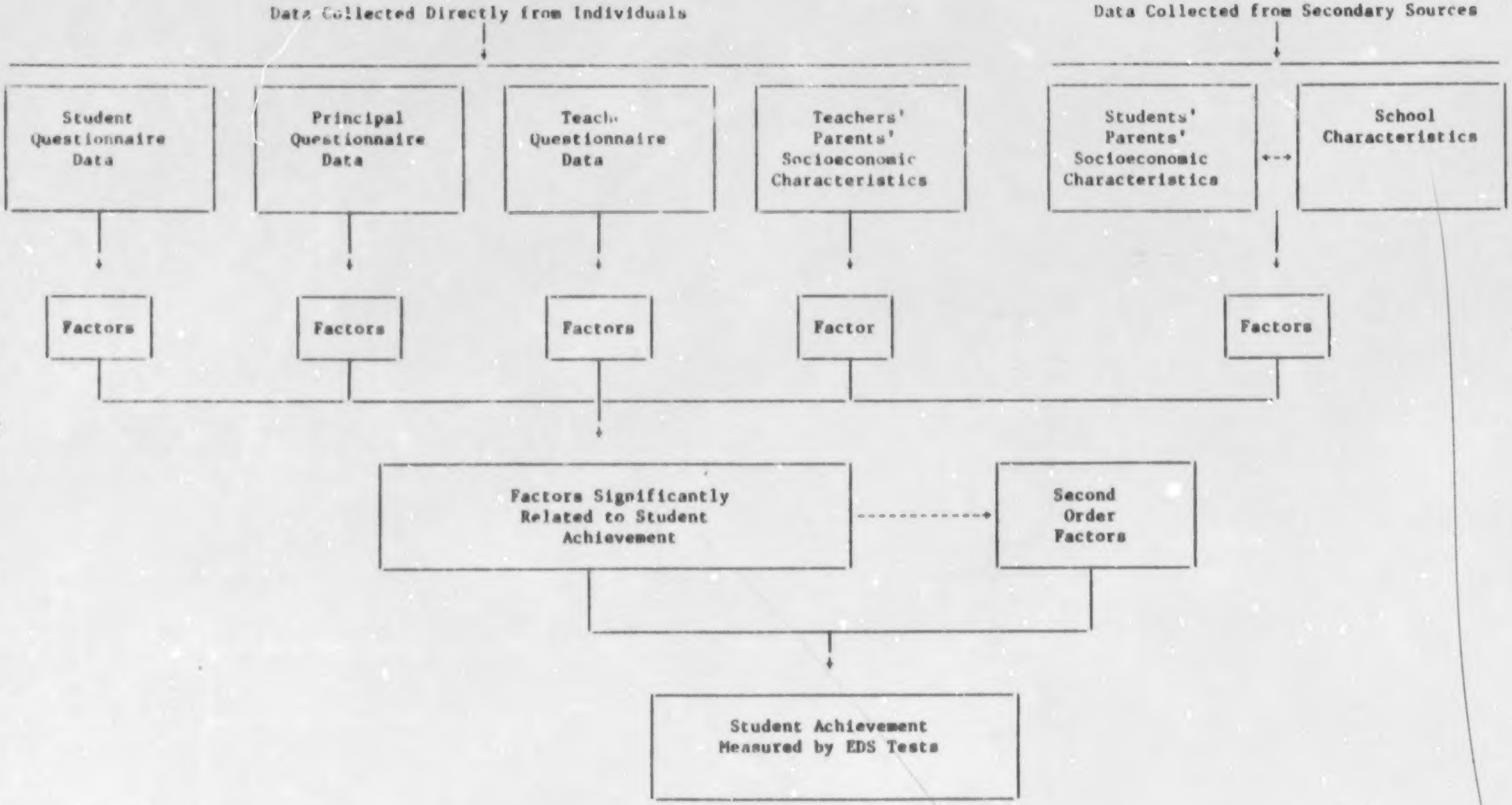
Data Collected Directly from Individuals
Data Collected from Secondary Sources
Student Questionnaire Data
Principal Questionnaire Data
Teacher Questionnaire Data
Teachers' Parents' Socioeconomic Characteristics
Students' Parents' Socioeconomic Characteristics
School Characteristics
Factors
Factors
Factors
Factor
Factors
Factors Significantly Related to Student Achievement
Second Order Factors
Student Achievement Measured by EDS Tests

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Table V.1

Factor Analysis of Student Questionnaire Data[1]

Factor One		Factor Two		Factor Three		Factor Four		Factor Five	
Students' Present Education Expectation and Comparisons with Others		Students' Future Education Expectation		Positive School Climate		Teacher Work and Push		Negative School Climate	
Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading
Parents Compare Pupil Work with That of Friends (Q 10)	.837	Students' Future Educational Expectation (Q4)	.856	How Important Is It to Do Well in School (Q 27)	.800	How Many Teachers Say Do Extra Work (Q 17)	.785	How Many Tease Students for Good Grades (Q 29)	.728
Teacher Compares Pupil Work with That of Friends (Q 13)	.826	Peer's Future Educational Expectation for Student (Q 6)	.833	How Important Is Learning to Teacher (Q 18)	.598	Teachers Tell Students to Get Good Grades (Q 15)	.665	How Many Afraid Others Won't Like Them (Q 30)	.727
Comparison of Work with That of Friends (Q 7)	.821	Parental Future Educational Expectation for Student (Q 8)	.780	How Often Do Teachers Help Students (Q 20)	.578				
Teacher Thinks Student Could Finish College (Q 14)	.787	If Most Students Here Could Go as Far as They Want, How Far Would They Go (Q 32)	.629	Positive Self-Concept Scale Score	-.543				
Parental Present Educational Expectation (Q 9)	.756	Parents' Think Student Could Finish College (Q 11)	-.500						
Parents Think Student Could Finish College (Q 11)	.717								
Students' High School Expected Rating (Q 5)	.671								
Teacher Present Educational Expectation (Q 12)	.638								

Factor Six		Factor Seven		Factor Eight		Factor Nine		Factor Ten	
Students and Teachers Care About Grades		Work Independently and Positive Locus of Control		Students Work Hard		Negative Self-Image		Learning That Occurs in School	
Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading
How Many Teachers Don't Care About Grades (Q 16)	.756	Positive Locus of Control Scale Score	.826	How Many Students Work Hard (Q 25)	.867	Negative Locus of Control Scale Score	.788	Teachers Don't Care How Hard Student Works As Long As He Passes (Q 19)	.802
How Many Students Don't Care About Grades (Q 26)	.747	All Students Working on Same Lesson (Q 21)	.728			Negative Self Concept Scale Score	.549	How Much Do Students Learn Here (Q 24)	-.516
Student Always Has Same Seat (Q 22)	.533								

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[1] Only factors with an eigenvalue greater than 1.00 are included. Each variable noted here has a factor loading greater than .500 (positive or negative). The factor loadings reported here are the result of a varimax rotation.

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(10) learning that occurs in school. A list of these factors and the variables associated with each are found in Table V.1.

Two education expectation factors emerged. One was composed of present academic expectations and comparison of work with classmates (Factor 1), while the other involved future education expectations (Factor 2). The students apparently responded differently to questions about how well they are currently doing in school than they did to items about how far they expected to go in school. As will be explained later, the students' future expectations are related to the schools' performance relative to expectation. The students' present expectations and future expectations are not related to socioeconomic characteristics.

B. Factor Analysis of Teacher Questionnaire Data

The factor analysis on the teacher questionnaire was performed on 71 items. These items were 67 original or recoded questions from the instrument plus scores on four scales derived from questions on the instrument. These scales were negative self-concept, positive self-concept, internal locus of control, and external locus of control.

Twenty-one factors with eigenvalues greater than 1.00 emerged from the analysis. The 10 factors with the largest eigenvalues were (1) college expectation for students, (2) student academic ability, (3) how hard the students try, (4) principals' help, (5) years of experience and preparation, (6) high school expectation for students, (7) teaching methods and attitudes (8) class works as a whole (9) teachers' self-concept and (10) priority for enhancing students' self-concept. A list of these factors and the variables associated with each is found in Table V.2.

Three education expectation factors emerged, each representing a different pattern of responses. Apparently, teachers respond differently when describing the general academic reputation of their schools, the number of students that they expect to finish high school, and the number of students they expect to go to college. For teachers, educational expectation for their students appears to be a multifaceted construct.

C. Factor Analysis of Principal Questionnaire Data

Fifty-five items were included in the factor analysis of the principal data. Of these variables, 51 were questionnaire items and four were scales. The scales were the same as those for the teacher analysis.

Seventeen factors with eigenvalues greater than 1.00 emerged from the analysis. The 10 factors with the largest

Table V.2

Factor Analysis of Teacher Questionnaire Data[1]

Factor One		Factor Two		Factor Three		Factor Four		Factor Five	
College Expectation for Student		Student Academic Ability		Students Try Hard		Principals' Help		Years Experience and Preparation	
Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading
Percent Principal Expects to Finish College (Q 31)	.871	Expected Achievement of the School (Q 19)	.864	How Many Students Do Extra Work (Q 62)	.726	How Easy Is It to Get Principal's Assistance (Q 53)	.866	Years Teaching Third Grade (Q 12)	.791
Percent You Expect to Attend College (Q 22)	.850	Teacher Compares Students to Other Schools (Q25)	[illegible]	How Many Students Try to Improve (Q 40)	.683	How Often Does Principal Help With Academics (Q 52)	.842	Total Years Teaching (Q 9)	.786
Percent Capable of Completing College (Q 35)	.846	Teachers' Rating of School's Reputation (Q 16)	.735	How Many Students Try to Do Better Than Others (Q 41)	.648			Experience at Present School (Q 10)	.742
Percent Principal Expects to Attend College (Q 30)	.826	Principal Compares Students to Other Schools (Q 33)	.727					How Much Formal Education (Q 15)	.506
How Many Parents Expect College Graduation (Q 45)	.808	Expected Achievement of the Class (Q 20)	.726						
Percent of Class Wanting to Attend College (Q 27)	.753	How Successful: Students' Social Skills (Q48B)	.672						
Percent of Class Capable of A's and B's (Q 24)	.686	How Successful: Students' Personal Growth (Q48C)	.561						
Parents Are Concerned with Educational Quality (Q 43)	.635	How Successful: Students' Academic Skills (Q48A)	.562						
		How Successful: Students' Occupational Aspirations (Q48D)	.515						
		Would You Rather Teach in Another School (Q38)	-.509						

Factor Six		Factor Seven		Factor Eight		Factor Nine		Factor Ten	
High School Expectation For Students		Teaching Methods and Attitudes		Class Works as a Whole		Teachers' Self-Concept		Priority for Enhancing Students' Self-Concept	
Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading
Percent of Class Wanting to Finish High School (Q 26)	.798	What Effect Do Teachers' Attitudes Have (Q 51)	.858	How Often Are All Students on Same Lesson (Q 56)	.884	Negative Self-Concept Scale Score	.863	Teachers' Highest Priority Should be Students' Self-Concept (Q 69)	.834
Percent Capable of Completing High School (Q 34)	.618	What Effect Do Teachers' Methods Have (Q 50)	.839	How Often Work With Class as a Whole (Q 55)	.844	Positive Self-Concept Scale Score	-.789	Principal Believes Teachers' Highest Priority Should be Students' Self-Concept (Q 71)	.748
Percent Principal Expects to Finish High School (Q 29)	.558					For Students to Achieve, They Must Have Freedom (Q 75)	.591		
Percent You Expect to Finish High School (Q 21)	.528								

[1] Twenty-one factors had an eigenvalue of 1.00 or greater. Correlation and regression analyses indicated that only factors one and two were significantly related to student achievement. Only the first 10 factors (with eigenvalues greater than 1.98) are included in this table. Each variable noted here has a factor loading greater than .500 (positive or negative). The factor loadings reported here are the result of a varimax rotation.

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eigenvalues were (1) future academic expectations for students, (2) school success and students' academic ability, (3) parents' concern about grades and education, (4) hours spent working, (5) principal working with teachers, (6) principal's attitudes and locus of control, (7) years of experience, (8) presence of teacher and principal, (9) principal's self-concept, and (10) parental support. A list of the factors and variables associated with each is found in Table V.3.

Several factors similar to those from the teachers' analysis were found in the analysis of principals' data. Two education factors emerged. Factor two on the principals' factor analysis (student academic ability) was very similar to factor two on the teachers' factor analysis. Factor one on the principals' factor analysis was similar to a combination of teachers' factor one (college expectation for students) and factor six (high school expectation for students). Both teacher and principal analyses had self-concept and years of experience factors. The principal analysis had two factors related to parents' concern and support, while the teachers' analysis had none.

D. Factor Analysis of Teachers' Parents' Socioeconomic Characteristics

Since some significant correlations occurred between measures of the teachers' parents' socioeconomic characteristics and the teachers' educational expectations for their students, factor analysis of the items measuring teachers' parents' socioeconomic characteristics was deemed appropriate. The factor analysis was performed on six items: teachers' fathers' education, teachers' mothers' education, percentage of teachers' fathers who were professionals, percentage of teachers' mothers who work, percentage of teachers' mothers who taught, and teachers' parents' ethnicity. A one-factor solution was forced. This one factor was not significantly related to student achievement. The relationship between this factor and teachers' educational expectation for their students will be described later.

E. Factor Analysis of Students' Socioeconomic and School Data Base

The factor analysis of the student socioeconomic and school data base was described in detail in Chapter Four. See Table IV.9 for a description of the three factors that emerged from this analysis.

Table V.3

Factor Analysis of Principal Questionnaire Data[1]

Factor One		Factor Two		Factor Three		Factor Four		Factor Five	
Future Academic Expectations for Students		School Success and Students' Academic Ability		Parents' Concern About Grades and Education		Hours Spent Working		Principal Working with Teachers	
Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading
Number of Parents Expecting College (Q 36)	.865	How Successful: Students' Academic Skills (Q 25A)	.823	Parents Concerned About Quality Education (Q 55)	.731	Hours Spent in Non-academic Advising (Q 13)	.830	How Often Discuss Achievement With Teachers (Q 41)	.682
Percent You Expect to Attend College (Q 31)	.852	How Successful: Students' Social Skills (Q 25B)	.817	Number of Parents Not Caring About Low Grades (Q 37)	-.634	Hours Spent in Academic Advising (Q 12)	.799	How Often Suggest Improvements to Teachers (Q 40)	.645
Percent You Expect to Finish College (Q 32)	.837	How Successful: Students' Personal Growth (Q 25C)	.683	Percent You Expect to Finish High School (Q 30)	.597	Hours Spent Observing Classes (Q 14)	.695	Percentage of Pupils Receiving Free Lunch (Q 20)	-.580
Percent You Expect to Get A's and B's (Q 33)	.660	Rating of School's Reputation Among Educators (Q 21)	.621						
Rating of Students Compared with Others (Q 34)	.623	Rating of School on Achievement (Q 22)	.578						
Percent You Expect to Finish High School (Q 30)	.598								
Number of Parents Expecting High School (Q 35)	.503								

Factor Six		Factor Seven		Factor Eight		Factor Nine		Factor Ten	
Principals' Attitudes and Locus of Control		Years Experience		Presence of Teacher and Principal		Principals' Self Concept		Parental Support	
Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading	Variable Name (Question Number)	Factor Loading
How Much Does Attitude Affect Achievement (Q 43)	.781	Total Experience as Principal (Q 3)	.879	How Often Called Out of Building/Month (Q 45)	.716	Principals' Negative Self-Concept Scale	.849	Average Daily Attendance (Q 9)	-.713
Teachers Highest Priority - Student Self-Concept (Q 50)	.660	Experience as Principal of This School (Q 2)	.869	Number of Days Average Teacher Absent (Q 19)	.695	Principals' Positive Self-Concept Scale	-.745	How Many Families Attend PTA Meeting (Q 8)	.648
Principals' Internal Locus of Control Scale	.629								

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[1] Seventeen factors had an eigenvalue of 1.00 or greater. Correlation and regression analyses indicated that only three factors (factors 1, 5, and 10) were significantly related to student achievement. Only the first 10 factors (with eigenvalues greater than 1.65) are included in this table. Each variable noted here has a factor loading greater than .500 (positive or negative). The factor loadings reported here are the result of a varimax rotation.

III. Correlations and Regressions Used to Select a Set of Predictors For Student Achievement

A. Relationship Between Student Questionnaire Factors and Student Achievement

Both correlation and regression analyses were used to determine the relationship between the student questionnaire factors and student achievement. As noted in Table V.4, there were significant correlations between four of the student questionnaire factors and student achievement. These four factors are students' future education expectations, students' perception of teachers' work and push, students' perception of negative school educational climate, and students' perception of how much teachers and students care about grades.

A multiple regression analysis with all 10 student questionnaire factors regressed against student achievement was also run. The same four variables were significant contributors to the regression model.

It is interesting that students' future education expectation is significantly related to student achievement, while students' present educational expectation is not. One problem with students' present educational expectation is that almost all students think they are better than most other students at the time. The students appear to be more discriminating in assessing their long term educational expectation.

The factor the most highly correlated with student achievement was the students' perception of how much students and teachers care about grades. As the perception of caring increases, so does student achievement. Apparently students at schools in which other students and their teachers care about grades score higher on achievement tests. Moreover, the more likely it is that the schools' academic achievement is low, the harder the students perceive themselves as being pushed academically by their teachers.

The more negative the academic environment in the school, the more likely it is that the schools' academic achievement is low. Students from the lower achieving schools are more likely to say that other students tease students who do well and that other students don't do as well as they could because they're afraid others won't like them as much.

B. Relationship between Teacher Questionnaire Factors and Student Achievement

There were significant correlations between only two of the teacher questionnaire factors and student achievement. Correlations between student achievement and all 21 teacher questionnaire factors were run. Correlations between the 10

Table V.4

Correlations Between Student Questionnaire Factors and Student Achievement

Factor	Mean Score on STS Basic Skills Tests
1. Students' Present Education Expectation and Comparison with Others	.149
2. Students' Future Education Expectation	.312**
3. Positive School Climate	-.070
4. Teachers' Work and Push	.263*
5. Negative School Climate	.384***
6. Students and Teachers Care About Grades	.492****
7. Work Independently and Positive Locus of Control	-.185
8. Students Work Hard	-.060
9. Negative Self-Image	-.084
10. Learning That Occurs in School	.059

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

teacher questionnaire factors with the highest eigenvalues and student achievement are reported in Table V.5. The two teacher questionnaire factors significantly correlated with student achievement were the teachers' expectations that their students would go to college and the teachers' perception of student academic ability.

A multiple regression analysis with the 10 teacher questionnaire factors regressed against student achievement found that the same two variables noted above were the only significant contributors to student achievement.

Thus, two measures of the teachers' assessment of academic ability and promise were the only teacher questionnaire factors significantly associated with student achievement. As might be expected, when teacher expectations increase so does student academic performance. Of course, students' parents' socioeconomic characteristics are also significantly correlated with both teacher expectations and student achievement.

C. Relationship Between Principal Questionnaire Factors and Student Achievement

There were significant correlations between four of the principal questionnaire factors and student achievement. Correlations between the 17 principal questionnaire items and student achievement were run. Correlations between the 10 principal questionnaire items with the largest eigenvalues and student achievement are reported in Table V.6. The four principal questionnaire factors significantly correlated with student achievement were principals' future academic expectations for students, principals' perception of school success and students' academic ability, how much the principal works with the teachers, and the principals' perception of parental support. A multiple regression analysis confirmed these results in that these four factors were the only significant contributors to student achievement.

The same kind of relationship occurred between principal perception of student academic ability and student achievement as were obtained for the teacher questionnaire items. When principal academic expectations and perceptions of student ability increase, so does student achievement.

The more active the principal in making suggestions to the teacher and meeting with them, the more likely it is that the schools' academic achievement is low. Principals from the low achieving schools are more actively involved with the teachers in trying to raise student achievement. Typically, the schools in whose principals stated that they were more actively involved also had a larger number of their students on free lunch programs.

Table V.5

Correlations Between Teacher Questionnaire Factors and Student Achievement

Factor	Mean Score on STS Basic Skills Tests
1. College Expectation for Students	-.231*
2. Student Academic Abilities	-.506****
3. Students Try Hard	.038
4. Principals' Help	.094
5. Years of Experience and Preparation	-.059
6. High School Expectation for Students	-.159
7. Teaching Methods and Attitudes	.120
8. Class Work as a Whole	.166
9. Teachers' Self-Concept	-.059
10. Priority for Enhancing Students' Self-Concept	.004

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

Table V.6

Correlations Between Principal Questionnaire Factors and Student Achievement

Factor	Mean Score on STS Basic Skills Tests
1. Future Academic Expectations for Students	-.379****
2. School Success and Students' Academic Ability	-.379****
3. Parents' Concern About Grades and Education	-.137
4. Hours Spent Working	.045
5. Principal Working With Teacher	.267*
6. Principals' Attitudes and Locus of Control	.067
7. Years of Experience	.067
8. Presence of Teacher and Principal	-.125
9. Principals' Self-Concept	-.013
10. Parental Support	.277*

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

The more the principal perceived strong parental support, the more likely it was that the schools' academic achievement was high. Parental support was measured by PTA participation and average daily attendance.

D. Relationship Between Students' Parents' Socioeconomic Characteristics/School Characteristics and Student Achievement

There were significant correlations between two of the factors in this group and student achievement. Students' parents' socioeconomic characteristics had a .69[*] correlation with student achievement, while percentage of the student body and teachers who are white has a .26[**] correlation with student achievement. In schools in which students' parents' socioeconomic characteristics were high and the percentage of the student body and teachers that was white was high, the schools' academic achievement was higher.

IV. Regressions Used to Predict Student Achievement from Reduced 12 Variable Model

Altogether there were 12 factors from the factor analyses of the various data bases which were significantly correlated with student achievement. These 12 factors were entered into multiple and stepwise regression analyses to determine which were the most important contributors to student achievement. These regression analyses had three major purposes: (1) to determine how much variation in student achievement can be explained by both socioeconomic and school characteristics, including school educational climate; (2) to determine the relative strengths of these socioeconomic and school variables in explaining variation in student achievement; and (3) to determine which school variables are the most important in explaining student achievement.

Results of the multiple regression analysis may be found in Table V.7, while results from the stepwise regression are located in Table V.8. The 12 factors explained 74 percent of the variance in school scores on the EDS basic skills test. Four of the factors were significant contributors to the model: students' parents' socioeconomic characteristics, students' perception of how much teachers and students care about grades, students' future education expectation, and students' perception of negative school educational climate. None of the factors derived from the teacher or principal questionnaires produced significant additional contributors to the model.

It is quite interesting that factors derived from the students' perception of school climate were significant contributors to the

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[*] $p < .0001$

[**] $p < .05$

Table V.7

Standardized Beta Weights for Reduced 12 Variable Multiple Regression Model and Variance in Student Achievement Explained by This Model

	Student Achievement
Multiple r^2	.744****
Adjusted r^2	.693
Independent Variables	
Students' Future Education Expectation	.278***
Students' Perception of Teacher Work and Push	.041
Students' Perception of Negative School Educational Climate	.164*
Students' Perception of How Much Teachers and Students Care About Grades	.357****
Teachers' Expectations That Their Students Will Attend College	.015
Teachers' Perception of School Success and Students' Academic Abilities	-.158
Principals' Future Academic Expectations for Students	-.026
Principals' Perception of Student Academic Ability	-.036
How Much Principal Works with the Teachers	.058
Principals' Perception of Parental Support	.034
Students' Parents' Socioeconomic Characteristics	.379***
Percentage of Student Body and Teachers Who Are White	.137

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

Table V.8

Cumulative and Additional Variance Explained Using Reduced 12 Variable Stepwise Regression Model to Explain Student Achievement*

Independent Variables Entered	Cumulative r^2	Additional r^2 Explained
Students' Parents' Socioeconomic Characteristics	.485	
Students' Perception of How Much Teachers and Students Care About Grades	.573	.088
Percentage of Student Body and Teachers Who Are White	.640	.067
Students' Future Education Expectation	.697	.057
Students' Perception of Negative School Educational Climate	.721	.024
Remaining Seven Variables	.744	.023

* The stepwise procedure used here is the maximum r^2 improvement technique. No switching of variables occurred through the fifth step.

model explaining student achievement, while factors derived from the teachers' or principals' perception of school climate are not. The most important of the school climate factors is the students' perception of how much teachers and other students care about grades. The more students perceived that their teachers and other students cared about grades, the more likely it was that their school scored well on the norm referenced test. Eight and nine year old children are apparently perceptive enough to note better educational climates in schools which perform better on achievement tests.

The second most important school climate factor was the students' future educational expectation, while the students' perception of negative school educational climate was the third significant school climate predictor of student achievement. As noted in Table V.8, these three school climate variables account for 16.9 percent of the variance in student achievement after the effect of students' parents' socioeconomic characteristics had been taken into consideration. This high percentage of additional variance explained by school climate variables is encouraging and adds to the evidence in the school effectiveness literature that schools do make a difference.

V. Second Order Factor Analysis and Prediction Model

A. Introduction and Method

Previous analyses had produced parsimonious explanations of student achievement from within each of four separate data bases: school demographics (SES), student, teacher and principal questionnaire data. A full explanation of the data in the study required an integration of the separate perspectives. That is to ask, "Taken together, what combination of demographics/socioeconomic, student, teacher and principal data best explained student achievement at school level?" One way to address the question would have been an immediate second order factor analysis of the data from all previous analyses. That option was not available because it would have necessitated putting more variables than cases into the analysis. This step would violate mathematical assumptions of the factor analytic procedure. As an alternative, in the previous analyses each set of factors was regressed against mean student achievement as measured by the EDS. The 12 factors which significantly predicted student achievement were then entered into a second order factor analysis. As a final step, the 76 schools' scores on those second order factors were entered into a stepwise multiple regression of school mean student achievement.

B. Results

Using the 12 separate factors as variables, a second order factor analysis was computed. This procedure resulted in a clear four-factor solution. The varimax rotated product of this orthogonal factor analysis can be seen in Table V.9.

The first of the four second order factors appears to represent Students' SES. One dimension from each of the four previous factor analyses loaded on second order factor 1. Three factors from the earlier analysis loaded (see Glossary) so highly that any one would account for more than 50 percent of the variance on the first second order factor. The factor loading highest (.780) on this second order factor is P1--the principals' academic expectations for their students. The reader can refer to Table V.3 and note that items such as Q31 "What percentage of your students do you expect to go to college?" load highly on principals' academic expectations. The original items were constructed in such a way that a low score on P1 indicated high expectations and a high score indicated low expectations. Teacher factor T1, college expectations, also had a very high (.763) loading on the Students' SES second order factor. "What percentage of your students do you expect to go to college?" is an example of the items on T1. As with the principal questionnaire, a teacher response of "1" indicated that the teacher expected 90 percent or more and a response of "5" indicated 50 percent or less expected to go to college, so a low score on T1 indicated high expectations.

Students' parents' SES loaded at -.73 on the academic expectations factor. The negative sign on the loading indicates that a low SES rating is likely to indicate a low score on the second order factor Students' SES and hence high academic expectations.

Finally, the student factor S4, teachers work and push, loaded -.65. That is to say, the schools in which students feel that teachers push the hardest are schools with low SES children for whom principals and teachers have the lowest academic expectations.

To summarize, second order factor 1 appears to represent the broad concept of Student SES. Factors from all four data bases load highly on this factor. The highest loadings are principals' academic expectations, teachers' college expectations for the students, and students' parents' SES. Students' rating of teacher push was the fourth dimension to load. The directions of original items and factor loadings is such that a high factor loading (score) on the second order factor 1, Student SES, would represent low teacher and principal expectations, low SES parents, and high ratings by students of teacher work and push.

The second of the second-order factors appears to represent Current Academic Climate. The dimension loading highest in this factor is SES factor 2: school composition. SES 2 is composed of faculty and student racial composition and

Table V.9

Varimax Rotated Second Order Factor Loadings

Data Base	First Order Factor Number	Name	Second Order Factor Number One	Second Order Factor Number Two	Second Order Factor Number Three	Second Order Factor Number Four
Student Questionnaire Analysis	S 2	Future Educational Expectations			.785	
	S 4	Teacher Work/Push	-.648			
	S 5	Negative Academic Environment		.550		
	S 6	Peer and Teacher Care About Grades				.793
Teacher Questionnaire Analysis	T 1	College Expectation	-.763			
	T 2	Student Academic Ability/School Success		-.589		
Principal Questionnaire Analysis	P 1	Student Academic Expectation	.780			
	P 2	School Success and Students' Academic Ability				-.788
	P 5	Work with Teachers to Improve Achievement		.747		
	P 10	Parental Support			.862	
Demographical SES	SES 1	Students' Parents' SES	-.732			
	SES 2	Faculty Experience and Highest Degree Attained		.825		

quality of college attended by faculty. This is quite similar to a finding in Michigan by Brookover et al. (1978).

The second highest loading is P5: principal working with teachers. The directions of loadings are such that principals who stated that they met infrequently with teachers, infrequently made suggestions, and did not observe classes a great deal also had few students on free lunch.

Also loading highly on the second second-order factor is T2: teachers' rating of student academic ability and teaching success. It is interesting that the factor that includes teachers' rating of students' ability is highly correlated with students' parents' socioeconomic status.

The fifth student factor, negative school climate loaded highly on second order factor 2. The direction of loading was such that students who said few of their peers tease them about grades were most likely to be attending schools in which teachers reported students had high ability, principals reported not making many suggestions for change to teachers, and parents tended to be higher SES. Taken together, these dimensions are interpreted to represent the broad concept Current Academic Climate.

Second-order factor 3 is composed of student factor 2, future educational expectations, and Principal Factor 10, parental support. It seems logical that parents who go the trouble to attend PTA and make sure their children get to school would also instill high future educational expectations (e.g. finish college) in their children. It is important to remember that second order factor 3: Student Expectations/Parental Support is statistically independent of parental SES, teachers' estimation of students' ability and college potential, teachers' push and principals' expectations that students will go far in school.

The fourth second order factor is made up of two equally powerful factors. The first, S6, indicates that students feel that teachers and fellow students care about grades. The second, P2, is the principals' sense that the school is successful and students' academic ability. This principal notion of success is broad, spanning from student academic and social achievement to the school's reputation in the community. This fourth and final second-order factor appears to represent School Academic Caring and Success. It is gratifying to note that students' perception that peers and teachers care about grades correlates highly with principals' sense of school success.

C. Predicting Achievement Using the Second Order Factors

The goals of factor analysis and regression analyses are, respectively, data reduction and prediction. In this case, the original and second order factor analyses were conducted to reduce the nearly 300 family, student, teacher, and principal items to a much more manageable number of basic, second order factors. Those four second order factors are 1) Students' SES, 2) Current Academic Climate, 3) Student Expectations/Parental Support, and 4) School Academic Caring and Success.

The final statistical analysis conducted in this section was an effort to determine how well these four second-order factors could predict school-level student achievement gain. The procedure used was stepwise multiple regression.

As can be seen in Table V.10, the four factors, when combined, accounted for more than 67 percent of the variance between schools in achievement. Beyond being highly statistically significant, this model presents a powerful, parsimonious prediction of school effectiveness.

Each of the four second order factors adds more than 10 percent to the total amount of variance (r) that can be explained by the model.* Students' SES, Current Academic Climate, Student Expectations/Parental Support, and School Academic Caring and Success contribute substantial, independent information to the overall prediction model.

Given the size and representativeness of the sample and the rigorous procedures used to gather data, these results appear to offer substantial guidance for the improvement of elementary schools in Louisiana.

VI. Analyses Predicting Difference Between Actual and Predicted Scores

While performance on an achievement test was the primary outcome measure for this part of the analysis, the investigators believed that using other outcome measures might prove interesting. One such measure is the difference between actual and predicted scores on the EDS Basic Skills Tests. These residual scores are a measure of how well students are achieving after the effect of their socioeconomic characteristics have been considered.

Correlations and regressions were run to determine the relationship between the student, teacher, and principal questionnaire

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*The data presented here are based on unweighted school scores. Analyses in which scores were weighted by school size (that is, larger schools were $_2$weighted more heavily) produced a slightly higher total prediction (r =.7082) and a different stepwise ordering of factors.

Table V.10

Stepwise Regression of Four Second-Order Factors on School Mean Student Achievement

	Total r^2 +	r^2 Change	Significance
S.O.4 School Academic Caring and Success	.2218	.2218	$\leq$.0001
S.O.1 Students' SES	.3903	.1685	$\leq$.0001
S.O.2 Current Academic Climate	.5579	.1676	$\leq$.0001
S.O.3 Student Expectations/Parental Support	.6714	.1135	$\leq$.0001

factors and the difference scores. None of the teacher and principal questionnaire factors was significantly correlated with the difference scores.

Two of the student questionnaire items were significantly correlated with the difference scores. These factors were students' future educational expectation ($\underline{r}$=.269) and the students' perception of how much other students and teachers care about grades ($\underline{r}$=.435). Results of the correlational analysis are found in Table V.11.

These two student school climate factors were entered into a multiple regression model predicting the difference score. As indicated in Table V.12, these two factors alone accounted for 26 percent of the variance in the difference between actual and predicted scores. It should be remembered that these two factors were also strong predictors of student achievement. Once more, the students' assessment of school climate is a stronger predictor of school outcome than either the teachers' or the principals' assessment.

VII. Analyses Predicting Teachers' and Students' Expectation

A. Rationale for Analysis and Selection of Variables

Brookover et al. (1979) and others have discussed the need to measure school outcomes in terms other than student achievement. More qualitative measures of school outcome could include indicators such as students' academic self-esteem, students' academic internal/external locus of control, students' expectation for future education, etc. The investigators decided to focus on two additional measures of school outcome: teachers' future educational expectation for the students and students' future educational expectation for themselves.

The analyses presented earlier in this chapter indicate that teacher and student expectations are different. While both students' future educational expectation and teachers' expectation for students' going to college are significantly correlated with student achievement, the students' future educational expectation is a much better predictor of student achievement. See Table V.7. Also, students' future educational expectation is significantly related to the difference between actual and predicted achievement score, while teachers' future educational expectation is not.

The investigators decided to develop two different regression models: one to predict students' future educational expectations and one to predict teachers' future educational expectations for the students. It was believed that the factors which explain these two dependent variables might be quite different. In order to get two comparable measures of

Table V.11

Correlations Between Student Questionnaire Factors and Difference Between Actual and Predicted Scores

Factor	Difference Between Actual and Predicted Scores
1. Students' Present Educational Expectation and Comparison with Others	-.048
2. Students' Future Educational Expectation	.269*
3. Positive School Climate	-.119
4. Teachers' Work and Push	-.103
5. Negative School Climate	.138
6. Students and Teachers Care About Grades	.435****
7. Work Independently and Positive Locus of Control	.021
8. Students Work Hard	-.004
9. Negative Self-Image	.024
10. Learning That Occurs in School	.039

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

Table V.12

Standardized Beta Weights for Reduced Two Variable Multiple Regression Model and Variance in Difference Score Explained by This Model

	Difference Between Actual and Predicted Score
Multiple $\underline{r}^2$	.262****
Adjusted $\underline{r}^2$	.241
Independent Variables	
Students' Future Educational Expectation	.269*
Students and Teachers Care About Grades	.435****

* $\underline{p}<.05$
** $\underline{p}<.01$
*** $\underline{p}<.001$
**** $\underline{p}<.0001$

expectation, recoding of the variables had to occur. The investigators decided to use Question 22 from the teachers' questionnaire as the measure of teachers' future educational expectation for the students. This question asked what percent of the class the teacher expected to attend college, and responses ranged from less than 30 percent to 90 percent or more.

A comparable measure from the students' questionnaire was recoded from Question 4. The recoding resulted in the percentage of students that expected to attend college.

The models used to predict students' and teachers' future educational expectations also had to be different from that presented in Figure V.1. The data from the students' questionnaires were eliminated in the prediction of students' future educational expectation, since this would result in the same items being used as both independent and dependent variables. Similarly, the data from the teachers' questionnaires were eliminated in the prediction of teachers' future educational expectation. Furthermore, data from the students' questionnaires were eliminated in the prediction of teachers' future educational expectation, since a causal connection in that direction is very unlikely.

B. Prediction of Teachers' Future Educational Expectation for Students

Correlations and regressions were used to select factors associated with teachers' expectations in the same way in which they were used to select factors associated with student achievement. Regression analyses indicated that there were five factors which significantly contributed to the models predicting teachers' expectations. These factors were (1) principals' academic expectation for the students, (2) principals' rating of parental support, (3) teachers' parents' socioeconomic status, (4) students' parents' socioeconomic status, and (5) faculty's experience and training.

Results of a multiple regression model using these five variables to predict teachers' expectations for the percentage of students going on to college are found in Table V.13. Two of the variables which are significant contributors to this model are socioeconomic characteristics: students' parents' socioeconomic status and teachers' parents' socioeconomic status. As might be expected, as the students' parents' socioeconomic status increases so do the teachers' expectations for the percent of the students who will go to college.

On the other hand, as the teachers' parents' socioeconomic status increases, the teachers' expectation for the students decreases. Teachers from higher status socioeconomic backgrounds may be more realistic in their appraisal of how far

Table V.13

Standardized Beta Weights for Five Variable Multiple Regression Model and Variance in Teachers' Educational Expectations for Students Explained by This Model

	Teachers' Future Education Expectations for Students
Multiple $\underline{r}^2$	.461****
Adjusted $\underline{r}^2$	.421
Independent Variables	
Principals' Academic Expectations for the Students	-.289**
Principals' Rating of Parental Support	.086
Teachers' Parents' Socioeconomic Status	-.210*
Students' Parents' Socioeconomic Status	.396***
Faculty Experience and Training	.088

* $\underline{p}<.05$
** $\underline{p}<.01$
*** $\underline{p}<.001$
**** $\underline{p}<.0001$

their students will go in school than teachers from lower socioeconomic backgrounds. More evidence with regard to this phenomenon will be presented in Chapter Six.

The third significant contributor to teachers' expectations is the principals' academic expectation for the students. As the principals' expectations increased, so did the teachers' expectations.

It should be noted that the overall model predicting teachers' expectations is a good one, predicting 42.1 percent of the variance. Also, it is important to remember that these expectations are very much a function of the socioeconomic characteristics of the students and of the parents of the teachers themselves.

C. Prediction of Students' Future Education Expectations

Regression analyses indicated that only three factors made significant contributions to the model predicting students' expectations: (1) principals' academic expectations for the students, (2) principals' perception of parents' concern about grades and education, and (3) principals' rating of parental support. It is interesting that none of the teacher factors was significantly associated with student expectations, while three of the principal factors were.

The directions or the associations between the principals' factors and students' expectations are as one might have expected. Students' educational expectations are positively associated with principals' rating of parental support, principals' perceptions of parents' concern for grades, and principals' academic expectations for the students. As the principals' rating of parental support increases, so do students' expectations for going on to college. As principals' perception of parents' concern about grades and education increases, so do students' expectations. Finally, as the principals' academic expectations for the students increase, so do students' expectations. See Table V.14 for a summary of these results.

In comparing the models predicting students' and teachers' expectation, two important differences emerge: (1) socioeconomic characteristics do not affect students' expectations, while they have a great effect on teachers' expectations, and (2) the model predicting students' expectations does not explain nearly as much variance (22 percent) as that predicting teachers' expectations (46 percent).

Table V.14

Standardized Beta Weights for Three Variable Multiple Regression Model and Variance in Students' Expectations Explained by This Model

	Students' Future Educational Expectation
Multiple $\underline{r}^2$	.216***
Adjusted $\underline{r}^2$	.181
Independent Variables	
Principals' Academic Expectation for the Student	-.251*
Principals' Perception of Parents' Concern About Grades and Education	.263*
Principal's Rating of Parental Support	.289**

* $\underline{p}<.05$
** $\underline{p}<.01$
*** $\underline{p}<.001$

Table V.15

Correlations Among Students' Educational Expectations, Teachers' Educational Expectations, Students' Parents' Socioeconomic Characteristics, Achievement Scores, and Difference Scores

Students' and Teachers' Educational Expectations	Students' Parents' Socioeconomic Characteristics	Score on STS Basic Skills	Difference Between Predicted and Actual Scores on STS Basic Skills
Students' Expectations for Finishing High School	.15	.32*	.33*
Teachers' Expectations for Students Finishing High School	.43***	.30*	-.01
Students' Expectations for Going to College	.19	.34*	.28*
Teachers' Expectations for Students' Going to College	.52***	.41**	.08
Students' Expectations for Finishing College	.07	.14	.16
Teachers' Expectations for Students' Finishing College	.39**	.30*	.05

* $\underline{p}<.01$
** $\underline{P}<.001$
*** $\underline{p}<.0001$

D. Further Exploration of the Relationships Among Socioeconomic Characteristics, Educational Expectations, and Student Achievement

Correlations presented in Table V.15 shed more light on the relationship among various variables. The factor containing students' parents' socioeconomic characteristics is significantly correlated with teachers' expectations, while it is not correlated with students' expectations. Student and teachers' expectations are both significantly correlated with achievement scores. Students' expectations are significantly correlated with the difference between actual and predicted achievement scores, while teachers' expectations are not.

The correlations presented in Figure V.2 demonstrate some interesting relationships. Among these are the following:

(1) The factor containing students' parents' socioeconomic characteristics is negatively correlated with students' present educational expectations, which is also negatively correlated with student achievement.

(2) Students' future education expectations and teachers' future education expectations for the students are not significantly correlated, although both these variables are significantly correlated with student achievement.

(3) Student achievement is positively correlated with students' future educational expectations and negatively correlated with students' present education expectations.

VIII. Summary

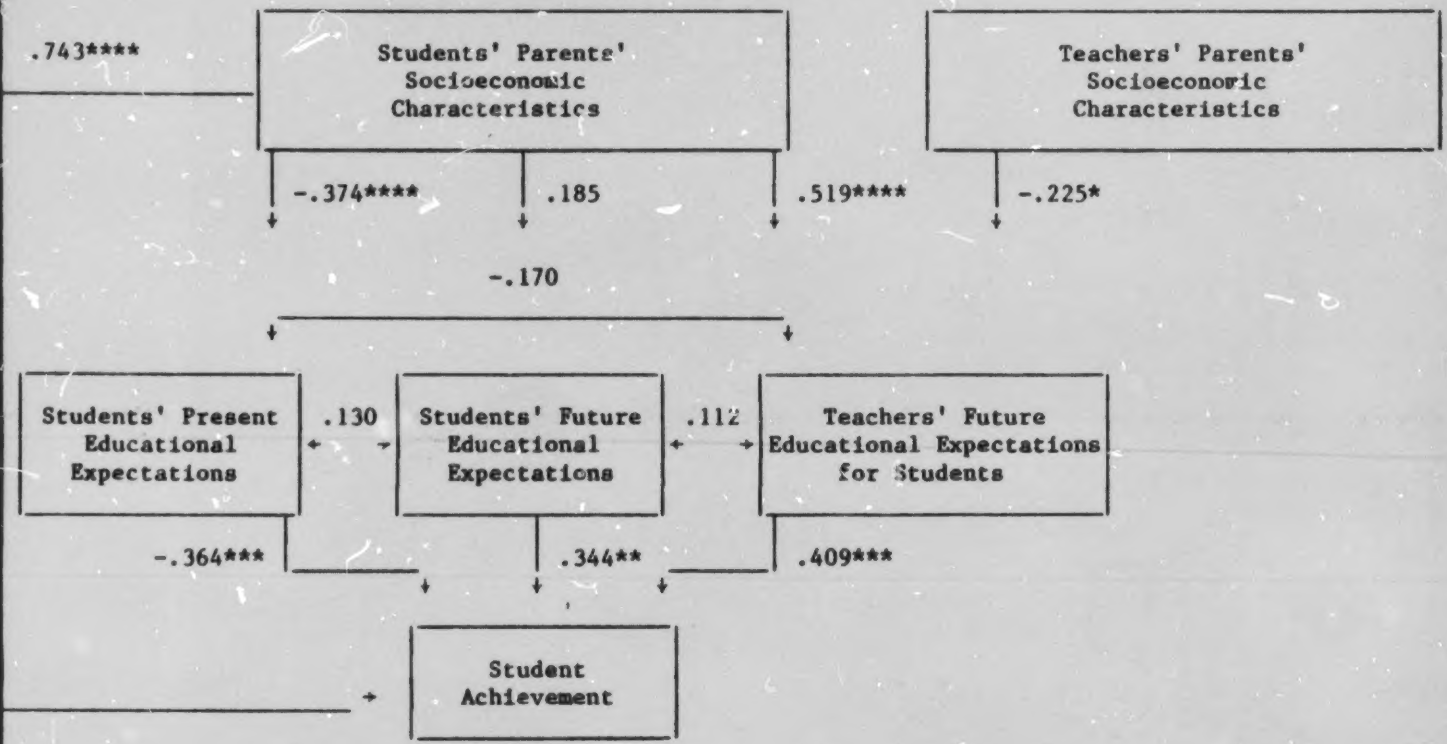
The analyses presented in the latter parts of this chapter (for example, predicting teachers' expectations and analyzing the differences between actual and predicted achievement test scores) add to an understanding of the processes involved in effective schooling. The analyses described earlier in the chapter, however, have a more direct bearing on the major goal of the LSES Phase Two--the identification of school-level attitudes and behaviors which predict student achievement.

The reduction of more than 300 variables into a four-variable model provides a parsimonious explanation of some of the major factors influencing effective schooling in Louisiana. The four factors were (1) Students' SES (students' SES, teachers' and principals' expectations for the students, and the students' perceptions of the amount their teachers push them academically; (2) Current Academic Climate (the degree of principals' involvement in academics, students' perceptions of the negativeness of the school climate, teachers' rating of students' ability and social composition of faculty and student body; (3) Students' Expectations/Parental Support (students' educational expectations and the principals' assessment of parental support); and (4) *School Caring and Success* (the students' perception that faculty and peers care about grades and the principals' beliefs that the school is successful).

An important finding from this chapter was that each of these four factors makes a significant and independent contribution to an explanation of student achievement. Three of these four factors (all except SES) can be manipulated by policy makers to create more effective schools.

Figure V.2

Correlations Among Socioeconomic Characteristics, Educational Expectations, and Student Achievement


.743****
Students' Parents' Socioeconomic Characteristics
Teachers' Parents' Socioeconomic Characteristics
-.374****
.185
.519****
-.225*
-.170
Students' Present Educational Expectations
.130
Students' Future Educational Expectations
.112
Teachers' Future Educational Expectations for Students
-.364***
.344**
.409***
Student Achievement

* $p < .05$
** $p < .01$
*** $p < .001$
**** $p < .0001$

CHAPTER SIX

ANALYSES OF VARIANCE

I. Criteria for Assigning Schools to Levels of Independent Variables

In the Louisiana School Effectiveness Study, Phase One (1980-82) report, the investigators described four different kinds of schools categorized on two dimensions: (1) those schools predicted to score high or low on state assessment tests, and (2) those schools which actually scored high or low on the assessment tests. Ten schools were included in these analyses, and a number of interesting differences were found among the four different kinds of schools (Louisiana State Department of Education, 1982).

The investigators decided to report similar analyses for the second phase of the study, but they also decided to greatly expand the scope of the comparisons. All 76 schools in which student, teacher, and principal school climate questionnaires were administered were included in these analyses. The analysis of variance design included two independent variables: (1) whether the student body of the school came from high or low socioeconomic backgrounds; and (2) whether the student body scored above, at, or below how well they were predicted to score on the EDS.

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective		
	Typical		
	Ineffective		

A factor analysis of the students' parents' socioeconomic data was performed to divide schools into high or low socioeconomic groups. The average education of the students' mothers, the average education of the students' fathers, the percentage of the students with fathers who had professional jobs, the percentage of the students with mothers who had professional jobs, and the percentage of the students who were white was determined for each school. These five variables were then factor analyzed, and one factor with an eigenvalue greater than 1.00 was found. The factor loadings for the five variables on this one socioeconomic variables are as follows: (1) mothers' education [.90], (2) fathers' education [.92], (3) fathers' profession [.93], (4) mothers' profession [.81], and (5) percentage white [.53].

A factor score for each school was determined from this factor analysis. All schools with a socioeconomic factor score greater than zero were considered to be high socioeconomic schools; all schools with a socioeconomic factor score less than zero were considered to be low socioeconomic schools. Thirty-eight of the schools were classified as high socioeconomic schools, and 38 were classified as low socioeconomic schools.

While a single score was required to categorize a school as high or low socioeconomically, data on all five socioeconomic variables were used in the multiple regression model predicting how well a school should perform on the EDS test. This procedure is very similar to that used by the LDE to determine how well districts should perform on statewide assessment tests (Louisiana State Department of Education, 1983).

The regression model allowed the investigators to predict how well each school should perform on the EDS based on the five socioeconomic characteristics of the students. These predicted scores were then compared with the schools' actual scores, and a measure of the deviation from predicted score was made. This measure of deviation was the studentized residual (the difference between the predicted and actual score divided by the standard error for the difference). Twenty-five schools were categorized as scoring above their predicted score, 27 were categorized as scoring at their predicted score, and 24 were categorized as scoring below their predicted score. Appendix 8 presents the school number, predicted score, actual score, and studentized residual score for each of the 76 schools.

The research design resulted in a fairly even distribution of schools, third grade teachers, and third grade students in each of the six types of schools as indicated in the chart below:

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	Number of Schools = 12 Number of Teachers = 37 Number of Students = 808	Number of Schools = 13 Number of Teachers = 35 Number of Students = 729
	Typical	Number of Schools = 15 Number of Teachers = 59 Number of Students = 1244	Number of Schools = 12 Number of Teachers = 50 Number of Students = 1079
	Ineffective	Number of Schools = 11 Number of Teachers = 27 Number of Students = 594	Number of Schools = 13 Number of Teachers = 40 Number of Students = 914

II. Descriptive Characteristics of Schools in Each of the Six Categories

Most of this chapter will be devoted to presenting differences among the six types of schools in the school educational climate described by students, teachers, and principals on questionnaires that they completed. Before turning to these school climate descriptions, however, it is informative to look at differences among the schools on basic variables such as test performance, socioeconomic backgrounds of students and teachers, and school characteristics. These differences may help set the stage for differences in the school educational climates that will be described later.

The first data presented in Table VI.1 indicate significant differences in performance on tests. Students from higher socioeconomic schools score significantly better than students from lower socioeconomic schools on all of the EDS norm-referenced and BST criterion-referenced tests.

Selected means on test performance for the six types of schools are found in Table VI.2. On the EDS Basic Skills Test, which includes EDS Reading, English and Math Tests, the order of scores from the highest to the lowest is as follows: effective, high socioeconomic; typical, high socioeconomic; effective, low socioeconomic; ineffective, high socioeconomic; typical, low socioeconomic; ineffective, low socioeconomic. The most interesting aspect of this pattern of scores is that the effective, low socioeconomic schools actually outscored the ineffective, high socioeconomic schools.

The selected means on the students' parents' socioeconomic characteristics presented in Table VI.3 confirm the large differences in socioeconomic backgrounds of students from the high and low socioeconomic schools. The average score for each of the three high socioeconomic groups is higher than that for each of the three low socioeconomic groups on mothers' and fathers' education and occupation variables. Again, it is interesting that students in the effective, low socioeconomic group outscored those from the ineffective, high socioeconomic group even though they had less educated parents in lower professional jobs.

As indicated in Table VI.1, there are only two significant differences on school characteristics among the different types of schools. Higher socioeconomic schools have a larger percentage of whites on their faculties and have faculties with graduates from universities with a higher passing rate on the NTE. Means for the six types of schools on these and other school characteristics are found in Table VI.4.

Finally, significant differences among schools on teachers' parents' SES are also given in Table VI.1. It should be noted that these data are only from third grade teachers who completed

Table VI.1

Tests of Significance on EDS Tests, Louisiana Basic Skills Tests, Students' Parents' Socioeconomic Characteristics, School Characteristics, and Teachers' Parents' Socioeconomic Characteristics

Variable	*F*-value for Schools' Performance Relative to Expectation	*F*-value for Socioeconomic Characteristics of Students	*F*-value for Interaction
Performance on Tests			
EDS Verbal Test	16.75****	88.97****	2.62
EDS Reading Test	29.56****	72.02****	2.24
EDS English Test	31.80****	93.30****	1.29
EDS Math Test	46.21****	31.98****	0.18
EDS Basic Skills Test	47.98****	95.67****	1.25
Louisiana Basic Skills Language Test	4.23*	26.20****	0.80
Louisiana Basic Skills Math Test	4.70*	12.99***	0.43
Students' Parents' Socioeconomic Characteristics			
Average Education of Mothers	0.17	74.07****	1.25
Average Education of Fathers	0.20	76.07****	0.67
Percentage of Students with Professional Fathers	2.26	88.07****	1.31
Percentage of Students with Professional Mothers	0.53	78.75****	0.34
Percentage of Students Who Are White	0.43	25.20****	0.56
School Characteristics			
Percentage of Faculty That Is White	0.08	7.74**	1.53
Average Passing Rate on NTE of Universities the Faculty Attended	1.54	7.40**	0.30
Average Highest Degree Attained by Faculty	0.40	1.29	1.85
Average Total Experience of Faculty	0.21	0.02	2.78
Teachers' Parents' Socioeconomic Characteristics			
Percentage of Teachers with Professional Mothers	1.78	0.32	3.60*
Percentage of Teachers with Professional Fathers	0.30	0.02	1.56
Percentage of Teachers with Teaching Mothers	0.07	0.05	6.60**
Percentage of Teachers with Teaching Fathers	2.26	3.83*	4.83**

* $p<.05$

** $p<.01$

*** $p<.001$

**** $p<.0001$

Table VI.2

Selected Means for Test Performance for Six Types of Schools

A. EDS Verbal Test

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	35.78	31.61
	Typical	35.35	29.58
	Ineffective	31.99	28.78

B. EDS Math Test

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	41.47	39.90
	Typical	39.86	37.86
	Ineffective	37.83	36.15

C. EDS Basic Skills Tests

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	108.13	97.06
	Typical	103.70	91.53
	Ineffective	93.75	85.61

Table VI.2 (Continued)

Selected Means for Test Performance for Six Types of Schools

D. BST Language Test

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	92.61	89.81
	Typical	92.20	87.67
	Ineffective	90.50	86.26

E. BST Math Test

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	90.24	87.96
	Typical	90.12	86.44
	Ineffective	87.82	83.35

Table VI.3

Selected Means for Students' Parents' Socioeconomic Characteristics for Six Types of Schools

A. Average Education of Mothers

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	3.35	2.70
	Typical	3.38	2.74
	Ineffective	3.28	2.87

B. Average Education of Fathers

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	3.45	2.72
	Typical	3.55	2.74
	Ineffective	3.41	2.83

C. Percentage of Students with Professional Mothers [1]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	.56	.30
	Typical	.61	.28
	Ineffective	.56	.24

[1] For students' mothers, this is percentage of mothers who work that are professionals. Homemakers are not included as working.

Table VI.3 (Continued)

Selected Means for Students' Parents' Socioeconomic Characteristics for Six Types of Schools

D. Percentage of Students with Professional Fathers

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.33	.11
	Typical	.43	.12
	Ineffective	.33	.10

E. Percentage of Students Who Are White

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.68	.46
	Tpyical	.70	.35
	Ineffective	.63	.40

Table VI.4

Selected Means for School Characteristics for Six Types of Schools

A. Percentage of Faculty That Is White

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	.68	.64
	Typical	.75	.59
	Ineffective	.71	.65

B. Average Passing Rate on NTE of Universities the Faculty Attended

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	.61	.57
	Typical	.63	.56
	Ineffective	.58	.53

C. Average Highest Degree Attained by Faculty[1]

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	2.73	2.51
	Typical	2.64	2.61
	Ineffective	2.55	2.59

[1] 2 = bachelor's degree
3 = master's degree

Table VI.4 (Continued)

Selected Means for School Characteristics for Six Types of Schools

D. Average Total Experience of Faculty[2]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	13.55	12.88
	Typical	13.87	12.86
	Ineffective	12.00	13.38

[2] Noted in years of teaching.

the school climate questionnaires. Significant interaction effects were found for percentage of teachers with professional mothers and percentage of teachers with teaching fathers. The highest percentage of teachers with professional mothers and with teaching mothers is found in the effective, low socioeconomic group. See Table VI.5 for these percentages.

A final set of comparisons among the socioeconomic variables for the six types of schools is given in Table VI.6. This table compares the means for factor scores based on (1) the students' parents' SES, and (2) the teachers' parents' SES. The factor analysis resulting in factor scores for students' parents' SES was described above. As might be expected, the factor scores for the high socioeconomic schools were all positive and for the low socioeconomic schools were all negative.

The factor analysis for the teachers' parents' SES was based on six variables: (1) race of teachers' parents, (2) average educational achievement of teachers' mothers, (3) average educational achievement of teachers' fathers, (4) percentage of teachers' fathers who were professional, (5) percentage of teachers' mothers who work, and (6) percentage of teachers' mothers who teach. The factor scores are positive for the typical, high socioeconomic; ineffective, high socioeconomic; and effective, low socioeconomic groups. On the other hand, the factor scores are negative for the typical, low socioeconomic; ineffective, low socioeconomic; and effective, high socioeconomic groups. If one assumed that teachers from high socioeconomic backgrounds would go to higher socioeconomic schools, that trend holds true except for the effective schools. It is interesting that the socioeconomic background for teachers in the effective, low socioeconomic group is almost identical to that for two of the high socioeconomic groups.

III. Results from Analysis of Students' Questionnaires

A. Introduction

Student questionnaires were administered to 5,389 third grade students in the 76 schools in the sample population. Responses to specific questions ranged from 5,368 (99.6 percent of total) for question one to 5,192 (96.7 percent of total) for question 15. A copy of the student questionnaire is found in Appendix 4.

There were 46 items on the student questionnaire. To simplify presentation of the results, the items were divided into eight groups for discussion: students' future educational expectation, students' present educational expectations, students' perceptions of teachers, students' assessment of school educational climate, structure of the classroom, students' self-concept, students' internal-external locus of control, and comparisons of student responses to related items.

Table VI.5

Selected Means for Teachers' Parents' Socioeconomic Characteristics for Six Types of Schools

A. Percentage of Teachers with Professional Mothers

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	.43	.60
	Typical	.49	.26
	Ineffective	.44	.40

B. Percentage of Teachers with Teaching Mothers

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School' s Performance Relative to Expectation	Effective	.05	.29
	Typical	.22	.08
	Ineffective	.22	.10

Table VI.6

Means for Factor Scores for Students' Parents' Socioeconomic Characteristics and Teachers' Parents' Socioeconomic Characteristics

A. Means for Factor Scores for Students' Parents' Socioeconomic Characteristics[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.73	-.83
	Typical	1.02	-.86
	Ineffective	.64	-.77

B. Means for Factor Scores for Teachers' Parents' Socioeconomic Characteristics

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	-.14	.25
	Typical	.26	-.43
	Ineffective	.29	-.26

[1] Positive numbers indicate higher SES; negative numbers indicate lower SES.

Table VI.7

Tests of Significance on Student Questionnaire Items

Variable	F-value for Schools' Performance Relative to Expectation	F-value for Socioeconomic Characteristics of Students	F-value for Interaction
Student Future Expectation			
Student's Future Educational Expectation	6.83***	2.18	4.06*
Peer Future Educational Expectation for Student	4.62**	1.38	0.87
Parental Future Educational Expectation	11.83****	18.78****	1.09
Student Present Expectations			
Student's High School Expected Rating	2.21	5.09*	2.12
Comparison of Work with That of Friends	5.98**	46.46****	1.25
Parental Present Educational Expectation	1.53	16.27****	1.02
Parents Compare Pupil Work with That of Friends	0.12	22.02****	5.42**
Teacher's Present Education Expectation	2.77	16.17****	3.31*
Teacher Compares Pupil Work with That of Friends	0.68	25.50****	9.51****
Students' Perceptions of Teachers			
Teachers Tell Students to Get Good Grades	3.34*	45.64****	0.50
How Many Teachers Say Do Extra Work	0.61	35.58****	1.85
How Important Is Learning to Teacher	8.89****	10.07**	1.19
Teachers Don't Care How Hard Student Works	1.65	21.45****	1.27
How Often do Teachers Help Students	1.68	1.48	4.49**
School Educational Climate			
How Many Teachers Don't Care About Grades	3.98*	11.38***	0.05
How Many Students Don't Care About Grades	4.43**	16.58****	0.33
How Important Is It to Do Well in School	3.01*	0.36	6.70***
How Many Think Reading Is Fun	1.73	44.96****	2.63
How Many Tease Students for Good Grades	1.59	42.55****	5.28**
How Many Afraid Others Won't Like Them	0.72	61.88****	3.05*
How Many Would Study If Work Not Graded	1.82	49.95****	7.76***

Table VI.7 (Continued)

Tests of Significance on Student Questionnaire Items

Variable	F-value for Schools' Performance Relative to Expectation	F-value for Socioeconomic Characteristics of Students	F-value for Interaction
Structure of the Classroom			
All Students Working on Same Lesson	6.03**	0.03	0.33
Student Always Has Same Seat	4.68**	3.19	1.65
Teacher Works With Class as a Whole	5.86**	8.65**	2.86
How Much Do Students Learn Here	1.73	5.04*	3.64
Students' Self Concept			
Self-Concept Combined Scale Score	1.79	14.47****	17.38****
Negative Self-Concept Scale Score	4.02*	37.25****	17.29****
Positive Self-Concept Scale Score	4.11*	1.39	2.49
Students' Locus of Control			
Locus of Control Combined Scale Score	6.88***	27.83****	0.12
Negative Locus of Control Scale Score	5.67**	2.49	1.63
Positive Locus of Control Scale Score	2.20	36.87****	0.77
Comparisons of Student Responses to Related Items			
Peer Versus Parental Future Educational Expectation	2.06	7.74**	2.14
Student Versus Parental Future Educational Expectation	0.62	4.98*	2.89
Student Versus Parental Comparison of Work with That of Friends	5.04**	4.99*	1.14
Student Versus Teacher Comparison of Work with That of Friends	2.93*	2.74	3.07*

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

A summary of the significant differences on the student questionnaire items is found in Table VI.7. Significant results not reported in this table are that students in higher socioeconomic schools are slightly younger [F(1, 5362)=23.53, p<.0001] and have been at their school slightly less long [F(1, 5316)=14.03, p<.001] than students in lower socioeconomic schools.

B. Students' Future Educational Expectations

Three questions are included in this group of items: (1) the students' expectation of how far they think they will go in school, (2) the students' expectation of how far their best friend thinks they will go in school, and (3) the students' expectation of how far their parents think they will go in school. The patterns of means for these three questions are found in Table VI.8.

The first striking aspect of these results is the overall high level for students' future educational expectation. The average future educational expectation for all six of the school groups is to go to college for a while. It should be remembered that the percent of the population aged 25 and over completing at least four years of high school in Louisiana in 1980 was 58 percent, while only 13.4 percent of that population had a college degree (U.S. Bureau of the Census, 1980). Third graders have uniformly high future educational expectations, which are unrealistic for a large number of them.

The schools' performance relative to expectation has a significant effect on students' future educational expectations and on their perception of their friends' educational expectation for them; on the other hand, the SES of the students in the schools does not have a significant effect on these variables. Thus, the students' future educational expectations may be more affected by relative performance than by their SES. In the next section on teachers' responses, it will be demonstrated that teachers' expectations for the students' future education are more influenced by SES than by performance relative to expectation.

Special attention should be paid to two of the cells: the effective, low sociceconomic group and the ineffective, high socioeconomic group. Students in the effective, low socioeconomic group believe that they will go further in school than those in the ineffective, high socioeconomic group. They also think that their friends and parents expect them to go further than the students from the below prediction, high socioeconomic group. This is especially noteworthy, since teachers for these two groups expect the opposite. As will be noted in the next section, teachers in the ineffective, high socioeconomic group expect their students to go further than those in the effective, low socioeconomic group. It is

Table VI.8

Means for Student Future Education Expectations[1]

A. How far do you think you will go in school?

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	4.34	4.24	4.29
	Typical	4.29	4.14	4.22
	Ineffective	4.07	4.16	4.13

B. How far do you think your best friend believes you will go in school?

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	4.28	4.17	4.23
	Typical	4.13	4.09	4.11
	Ineffective	4.08	4.11	4.10

C. How far do you think your parents believe you will go in school?

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	4.51	4.41	4.47
	Typical	4.45	4.24	4.35
	Ineffective	4.32	4.19	4.24
		4.44	4.27	

1 = finish grade school
2 = go to high school for a while
3 = finish high school
4 = go to college for a while
5 = finish college

especially intriguing that the students in the effective, low socioeconomic group have such high educational expectations, while their teachers have rather low expectations for them. The teachers' expectations must be heavily determined by the SES of the students, yet they apparently are not conveying this low expectation to the students.

Of the questions in this group, only the parental future educational expectation item is significantly affected by student socioeconomic background. The students from higher socioeconomic schools believe that their parents expect them to go further in school than those from the lower socioeconomic schools. Again, student responses to this question are at odds for two groups (effective, low socioeconomic; ineffective, high socioeconomic) with teacher responses. The belief that their parents expect them to go further in school is held by more students in the effective, low socioeconomic group than by students in the ineffective, high socioeconomic group. Conversely, the belief that their students' parents expect the students to go less far in school is held by more teachers in the effective, low socioeconomic group than by teachers in the ineffective, high socioeconomic group. Details on these differences will be presented in the next section.

C. Students' Present Educational Expectations

Six questions are included in this group of items: (1) what kind of student do you expect to be when you finish high school; (2) do you do school work better, the same, or poorer than your friends; (3) what kind of student do your parents expect you to be in school; (4) do your parents think you can do school work better, the same, or poorer than your friends; (5) what kind of student does your teacher expect you to be in school; and (6) would your teacher say you can do school work better, the same, or poorer than other people your age. Tests of significance for these items are found in Table VI.7, while selected means are presented in Table VI.9.

The SES of the students' parents' has a significant effect on all six of the variables included in this group. Schools' performance relative to expectation is significant on only one variable (parental present educational expectation). Thus, schools' performance relative to expectation is more important in determining students' future expectation, while socioeconomic characteristics are more important in determining future expectations.

As the means in Table VI.9.A indicate, however, the direction of the SES effect is opposite to what one might have predicted. For all six items, students from the lower socioeconomic group have greater present educational expectations than those from the higher socioeconomic groups.

Table VI.9

Selected Means for Students' Present Educational Expectations

A. Means for High versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Students' High School Expected Rating	1.88	1.80
Comparison of Work with Friends	2.09	1.88
Parental Present Educational Expectation	1.69	1.58
Parents Compare Pupil Work with Friends	1.87	1.73
Teacher Present Educational Expectation	1.57	1.45
Teacher Compares Pupil Work with Friends	1.99	1.83

B. Parents Compare Pupil Work with Friends[1]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.85	1.75
	Typical	1.91	1.68
	Ineffective	1.80	1.77

C. Teacher Present Education Expectation[1]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.52	1.40
	Typical	1.62	1.44
	Ineffective	1.52	1.50

Table VI.9 (Continued)

Selected Means for Students' Present Educational Expectations

D. Teacher Compares Pupil Work with Friends[1]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.98	1.87
	Typical	2.04	1.76
	Ineffective	1.89	1.88

---

[1] For all these variables, a smaller number indicates that student expectation is greater.

It should be recalled that for student future expectation, the higher socioeconomic group believed that their parents expected them to go further in school than the lower socioeconomic group.

Further examination of questions dealing with present educational expectation may provide an explanation for this socioeconomic effect. All of the present expectation questions have responses which compare the students with their classmates; for example, do you expect to be one of the best, about the same, or below most of the students. It may be that students from the lower socioeconomic group compare their performance to that of their classmates, which is on the average lower than that of students in the higher socioeconomic group. This comparison with weaker students may provide the student with an unrealistic point of reference, which leads to faulty present educational expectations relative to actual performance. For example, students in the ineffective, low socioeconomic group have the highest present educational expectation for two of the items (students' high school expected rating, comparison of work with friends) even though their actual performance on the EDS is the lowest. It should be recalled the Brookover (1979) found similar results in his study of student expectations. It is interesting to speculate what long term effects these faulty educational expectations may have for low performing students.

As noted in Table VI.7, there are three significant interaction effects, the means for which are provided in Table VI.9, B, C, and D. These interactions between the effect of SES and performance relative to expectation are significant because: (1) there is a large difference between expectation of the typical, high socioeconomic group and the typical, low socioeconomic group; and (2) there is virtually no difference between expectation of the ineffective, high socioeconomic group and the ineffective, low socioeconomic group. The large difference between the typical, high socioeconomic group and the typical, low socioeconomic group highlights a general tendency toward a supportive educational environment for the typical, low socioeconomic group. The students in this group believe that their parents and teachers think they are good students. As will be demonstrated in the next section, teachers for this group also believe that the students' parents support education.

D. Students' Perceptions of Teachers

Five questions are included in this group of items: (1) how many teachers tell students to try to get better grades than their classmates; (2) how many teachers tell students to do extra work so they can get better grades; (3) How important is it to teachers that their students learn; (4) how many teachers don't care how hard the student works, as long as he/she passes; and (5) how often do teachers try to help students who do badly. Tests of significance for these items are found in Table VI.7, while means are presented in Table VI.10.

The schools' performance relative to expectation had a significant effect on the students' perception of how many teachers tell them to get good grades and on their perception of how important learning is to the teachers. Students in the effective group stated that their teachers more often told them to get good grades and that their teachers felt learning was more important. Of the six types of schools, students in the effective, low socioeconomic group stated that their teachers most often told them to get good grades.

The socioeconomic characteristics of the students' parents had a significant effect on four of the variables. Specifically, students from the lower socioeconomic schools stated that their teachers more often told them to get good grades and to do extra work than students from higher socioeconomic schools. Thus, teachers from lower socioeconomic schools are pushing their students to work harder to get good grades. This is particularly the case for the effective, lower socioeconomic group, who report being pushed the hardest.

Conversely, students from the higher socioeconomic schools believed that their learning was more important to their teachers and that fewer of their teachers didn't care how hard they worked than did students from lower socioeconomic groups. These responses indicate more concern with the quality of education on the part of the teachers in the higher socioeconomic schools, according to their students. Students giving their teachers the best marks on these items were those from the effective, high socioeconomic group.

There was a significant interaction effect on the item asking how often teachers try to help students who do badly. As Table VI.10.C indicates the group rated as most likely to help was the effective, low socioeconomic group. The group of teachers rated the least likely to help was the ineffective, low socioeconomic group.

E. Students' Perception of School Educational Climate

Eight questions are included in this group of items: (1) how many teachers don't care if their students get bad grades; (2) how many students don't care if they get bad grades; (3) how important do most of the students feel it is to do well in school work; (4) how many students think reading is a fun thing to do; (5) how many students tease other students who get good grades; (6) how many students don't do as well as they could because they are afraid other students won't like them as much; (7) if students did not have their work graded, how many would study hard; and (8) how much do students learn

Table VI.10

Selected Means for Students' Perceptions of Teachers

A. Means for Effective, Typical, and Ineffective Schools[1]

Variable	Effective	Typical	Ineffective
Teachers Tell Students to Get Good Grades	2.21	2.32	2.31
How Important Is Learning to Teacher	1.59	1.68	1.76

[1] For these variables a smaller response means that more teachers tell their students to get a good grade or that learning is the most important thing to the teachers.

B. Means for High versus Low Socioeconomic Schools[2]

Variable	High SES	Low SES
Teachers Tell Students to Get Good Grades	2.43	2.14
How Many Teachers Say Do Extra Work	2.62	2.35
How Important Is Learning to Teacher	1.62	1.73
Teachers Don't Care How Hard Student Works	2.96	2.73

[2] For these variables a smaller response means that more teachers tell their students to get a good grade, that more teachers say do extra work, that learning is the most important thing to the teachers and, that more teachers don't care how hard the student works as long as he/she passes.

Table VI.10 (Continued)

Selected Means for Students' Perceptions of Teachers

C. Means for "How Often Do Teachers Help Students Who Do Badly?"[3]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.74	1.61
	Typical	1.78	1.65
	Ineffective	1.71	1.82

---

[3] A response of one indicated that the teachers always try to help; a response of five indicated that the teachers never try to help.

Table VI.11

Selected Means for Students' Perception of School Educational Climate

A. Means for Effective, Typical, and Ineffective Schools [1]

Variable	Effective	Typical	Ineffective
How Many Teachers Don't Care About Grades	3.87	3.82	3.69
How Many Students Don't Care About Grades	3.63	3.63	3.47
How Important Is It To Do Well in School	1.55	1.60	1.67

[1] For "how many teachers..." and "how many students...", 1 = almost all, 5 = none. For "how important is it..." 1 = very important, 5 = not important at all.

B. Means for High Versus Low Socioeconomic Schools[2]

Variable	High SES	Low SES
How Many Teachers Don't Care About Grades	3.88	3.72
How Many Students Don't Care About Grades	3.68	3.49
How Many Think Reading Is Fun	2.51	2.23
How Many Tease Students for Good Grades	3.44	3.14
How Many Afraid Others Won't Like Them	3.56	3.22
How Many Would Study If Work Not Graded	2.66	2.32

[2] 1 = almost all, 5 = none.

Table VI.11 (Continued)

Selected Means for Students' Perception of School Educational Climate

C. Means for "How important do students feel it is to do well in school work?"[3]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.61	1.49
	Typical	1.64	1.55
	Ineffective	1.58	1.73

[3] 1 = very important, 5 = not important.

D. Means for "How many students tease students who get really good grades?"[4]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	3.38	3.27
	Typical	3.46	3.19
	Ineffective	3.49	2.99

[4] 1 = almost all, 5 = none.

Table VI.11 (Continued)

Selected Means for Students' Perception of School Educational Climate

E. Means for "How many students don't do as well as they could because they are afraid other students won't like them as much?"[5]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	3.54	3.33
	Typical	3.54	3.23
	Ineffective	3.61	3.13

[5] 1 = almost all, 5 = none.

F. Means for "If students did not have their work graded, how many would study hard?"[6]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.73	2.35
	Typical	2.72	2.23
	Ineffective	2.47	2.39

[6] 1 = almost all, 5 = none.

Table VI.11 (Continued)

Selected Means for Students' Perception of School Educational Climate

G. Means for "Compared to Other Schools How Much Do Students Learn Here"[7]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.04	2.04
	Typical	2.11	2.12
	Ineffective	2.00	2.24

---

[7] 1 = they learn a lot more here, 5 = they learn a lot less here.

here. Tests of significance for these items are found in Table VI.7, while selected means are presented in Table VI.11.

The schools' performance relative to expectation had a significant effect on the students' perception of how many teachers and students don't care if the students get bad grades and on how important the students believed it was to do well in school. Students in the ineffective group reported that more teachers and students in their schools did not care if the students got bad grades. Also, students in this group reported that it was less important to students in their school to do well in school.

Similarly, the socioeconomic characteristics of the students' parents had a significant effect on several of the variables. Students in the low socioeconomic group believed that more of the teachers and students in their schools did not care if the students got bad grades. Students in the low socioeconomic group did not think they learned as much as those in the high socioeconomic group. Also, students in the low socioeconomic group reported that more students in their school teased other students for getting good grades and that more students in their schools don't do as well as they could because they are afraid other students won't like them as well.

Students in the ineffective, low socioeconomic group give the most negative responses to several of the school climate variables (how many teachers care about grades, how many students care about grades, how many students feel school work is important, how many students tease others, how many students don't do as well as they could, how much do students learn here). These responses indicate that a very negative school climate exists in schools which score the lowest on achievement tests. The remarkable aspect of this finding is that eight and nine year old students can perceive that negative school climate.

There are significant interaction effects for five of the variables, and the pattern of means for these interactions are presented in Table VI.11. For the question asking how important students feel it is to do well in school, there is little or no difference among schools in the high socioeconomic group. Within the low socioeconomic group, however, there is a large difference with students from the effective group feeling it is more important to do well than those from the ineffective group. The interaction for three of the other variables (how many tease students for good grades, how many are afraid others won't like them as much, how much do students learn here) is a result of the large difference in responses by students from the ineffective high and low socioeconomic groups. The students in the ineffective high socioeconomic group report a better school environment than those from the ineffective low socioeconomic group.

The results for two of the items (how many students think reading is fun, how many students would study hard if work was not graded) are different from the other five school climate items and are somewhat counterintuitive. Students from the low socioeconomic group reported that they enjoyed reading more and would study harder even if their work weren't graded than students from the high socioeconomic group. It could be that students from the high socioeconomic group, who do better academically than those from the low socioeconomic group, are more pragmatic about studying and reading, seeing such activities as a means for getting good grades rather than being enjoyable intrinsically. Results reported previously indicate that students from the high socioeconomic group feel their parents expect them to go further in school. This push from parents may account for the more pragmatic approach their children have toward studying and reading.

F. Students' Perceptions of Classroom Structure

Three variables are included in this group of items: (1) how often are students in my class working on the same lesson, (2) how often do I have the same seat in class, and (3) how often does the teacher work with the class as a whole. Tests of significance for the items are found in Table VI.7, while means are presented in Table VI.12.

The school's performance relative to expectation had a significant effect on all three items. In each case, students in the effective schools had the least structure. Of the six different types of schools, students in the effective, high socioeconomic group reported the least structured environment on all three of these items.

G. Students' Report of Academic Self-Concept

The students were asked eight questions which measured aspects of their academic self-concept. These items were questions 33-40 (See Appendix 4). Three scales were constructed from these items: (1) a combined self-concept scale, which included responses to all of the questions; (2) a positive self-concept scale, which included responses to the items which made positive self-concept statements; and (3) a negative self-concept scale, which included responses to the items which made negative self-concept statements. Question 35 was eliminated from these analyses, since many students expressed confusion about its meaning. Tests of significance for scores on these scales are located in Table VI.7, while selected means may be found in Table VI.13.

Table VI.12

Selected Means for Students Perception of Classroom Structure

A. Means for Effective, Typical, and Ineffective Schools[1]

Variable	Effective	Typical	Ineffective
Students in My Class Work on Same Lesson	2.30	2.16	2.23
I Have Same Seat in Class	2.15	2.03	1.99
Teacher Works With the Class as a Whole	2.23	2.10	2.20

B. Means for High Versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Teacher Works with the Class as a Whole	2.22	2.11

[1] 1 = always
5 = never

Table VI.13

Selected Means for Student's Report of Academic Self-Concept

A. Means for Self-Concept Combined Scale Score[1]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	14.69	14.34
	Typical	14.27	14.51
	Ineffective	14.69	14.06
		14.49	14.31

[1] A larger number means a higher self-concept.

B. Means for Negative Self-Concept Scale Score[2]

		Socioeconomic Characteristics of Students' Parents		
		High SES	Low SES	
School's Performance Relative to Expectation	Effective	7.71	8.13	7.91
	Typical	7.92	7.84	7.87
	Ineffective	7.44	8.04	7.81
		7.75	7.99	

[2] A smaller number means a higher self-concept.

The socioeconomic characteristics of the students' parents had a significant effect on the combined scale and the negative self-concept scale. As might be expected, students from the higher socioeconomic group had better academic self-concepts, as measured by these two scales.

Similarly, the schools' performance relative to expectation had a significant effect on the positive self-concept scale score. Students from the effective group had better academic self-concepts than those from the other two groups. On the scale measuring negative self-concept, however, students from the effective group had the worst academic self-concept. This finding is a result of the students in the effective, low socioeconomic group having the lowest academic self-concept of all six groups, as measured by the negative self-concept scale.

There were two significant interaction effects, one for the combined scale and one for the negative self-concept scale. There are big differences in self-concept between high and low socioeconomic groups across all three levels of prediction, except for the typical level. As indicated above, students from the high socioeconomic group have better self-concepts than those from the low socioeconomic group, in all cases except those in which students do about as well as predicted. For the combined scale score, students from the effective, high socioeconomic group had the best self-concept, while those from the ineffective, low socioeconomic group had the worst.

H. Students' Report of Locus of Control

The students were asked six questions which measured aspects of their academic locus of control. These items were questions 41-46 (See Appendix 4). Three scales were constructed from these items: (1) a combined locus of control scale, which included responses to all of the items; (2) a positive locus of control scale, which included responses to positively worded statements; and (3) a negative locus of control, which included responses to negatively worded statements. Again, tests of significance for scores on these scales are located in Table VI.7, while selected means may be found in Table VI.14.

The socioeconomic characteristics of the students' parents had a significant effect on the locus of control combined scale scores and on the positive locus of control scale scores. In both cases, students from the high socioeconomic group gave more internal responses, which indicates that they assumed more personal responsibility for academic performance.

Also, schools' performance relative to expectation had a significant effect on the combined scale scores and on the

Table VI.14

Selected Means for Students' Report of Locus of Control

A. Means for Effective, Typical, and Ineffective Schools[1]

Variable	Effective	Typical	Ineffective
Locus of Control Combined Scale Score	9.21	9.28	9.42
Negative Locus of Control Scale Score	4.68	4.73	4.79

B. Means for High Versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Locus of Control Combined Scale Score	9.19	9.41
Positive Locus of Control Scale Score	4.49	4.66

[1] A smaller number indicates a more internal response.

negative locus of control scale scores. In both cases, students from the effective group assumed more responsibility than those from the other two groups. Students from the effective, high socioeconomic group assumed the most responsibility; those from the ineffective, low socioeconomic group assumed the least.

I. Comparison of Students Responses to Related Items

The students were asked similar questions about how far they, their parents, and their peers expected them to go in school. Also, the students were asked similar questions about how they, their parents, and their teachers compared their school work with that of their friends. The investigators decided to construct scales which would compare these responses to see, for instance, if students expected to go about as far in school as they believed their parents expected them to go. Significant results were found for four of these comparisons: (1) peer versus parental future educational expectation, (2) student versus parental future educational expectation, (3) student versus parental comparison of work with that of friends, and (4) student versus teacher comparison of work with that of friends. Tests of significance for these comparisons are found in Table VI.7, while selected means are found in Table VI.15.

The schools' performance relative to expectation had a significant effect on student versus parental comparison of work with that of friends and on student versus teacher comparison of work with that of friends. In both cases, students from the effective group believed that their parents or their teachers made more favorable comparisons of their work than they themselves did. In other words, they believed that their parents and teachers had higher expectations for their school performance than they, themselves, had.

Similarly, the socioeconomic characteristics of the students' parents had a significant effect on the student versus parental comparison of work. Students from the high socioeconomic group believed that their parents made more favorable comparisons of their work with that of friends than they themselves. Also, students from the high socioeconomic group believed that their parents expected them to go further in school than they or their peers expected them to go. In other words, students from the high socioeconomic perceived their parents as expecting relatively more from them than students from the low socioeconomic group perceived their parents as expecting from them.

There was a significant interaction on the student versus teacher comparison of work. The group which believed that teachers made the most favorable comparison relative to their own comparison was the effective, high socioeconomic group.

Table VI.15

Selected Comparisons of Student Responses to Related Items

A. Means for Effective, Typical, and Ineffective Schools[1]

Variable	Effective	Typical	Ineffective
Student Versus Parental Comparison of Work with That of Friends	.25	.19	.12
Student Versus Teacher Comparison of Work with That of Friends	.12	.09	.02

B. Means for High Versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Peer Versus Parental Future Educational Expectation	-.27	-.16
Student Versus Parental Future Educational Expectation	-.18	-.10
Student Versus Parental Comparison of Work	.22	.15

C. Means for Student Versus Teacher Comparison of Work[1]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	.16	.08
	Typical	.06	.11
	Ineffective	.08	-.02

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[1] For the questions on future educational expectation, the more negative the response, the higher the parents' expectations as compared with those of the students or peers. For the questions on comparison of work, the more positive the response, the better the parent or teacher response is than the student response.

The ineffective, low socioeconomic perceived the least difference between their comparison and their teachers' comparisons.

IV. Results from Analysis of Teachers' Questionnaires

A. Introduction

Questionnaires were administered to 248 third grade teachers in the 76 schools in the study population. Responses to specific questions ranged from all 248 for several of the questions to 220 (88.7 percent of total) for questions 58 and 59. A copy of the teacher questionnaire is located in Appendix 5.

The distribution of teachers in each of the six cells of the analysis of variance was described in this chapter in Section 1. The unit of analysis for the following results was the individual teacher.

There were 99 items on the teacher questionnaire. These items have been divided into 13 groups for discussion: teachers' teaching background; teachers' rating of schools' reputation; teachers' educational expectations for the students; teachers' perception of students' academic ambitions; teachers' perception of principals' educational expectations for the students; teachers' perception of how much the principal observes and helps; teachers' perception of parents' concern about educational matters; teachers' perception of schools' educational climate; teachers perception of classroom and school structure; teachers' perception of classroom and school structure; teachers' satisfaction with job; teachers' rating of time spent on math activities and homework; teachers' academic self-concept; and teachers' internal/external locus of control.

A summary of the significant differences on the teacher questionnaire items is found in Table VI.16.

B. Teachers' Teaching Background

Three items are included in this group for analysis: (1) how long have you taught in this school, (2) how many years have you taught third grade, and (3) what grade levels are you teaching. Tests of significance for these items are found in Table VI.16, while selected means are included in Table VI.17.

The results for years of teaching are interesting. The least successful group of teachers of high socioeconomic students (the ineffective, high socioeconomic group) has the least experience teaching third grade and the least experience at their present schools of teachers in their group. On the

Table VI.16

Test of Significance on Teacher Questionnaire Items

Variable	F-value for Schools' Performance Relative to Expectation	F-value for Socioeconomic Characteristics of Students	F-value for Interaction
Teachers' Teaching Background			
Experience at Present School	1.99	0.10	3.53*
Years Teaching Third Grade	4.83**	3.46	2.67
Grade(s) Taught	0.94	2.81	3.07*
Teachers' Rating of Schools' Reputation			
Teacher Rating of School's Reputation	6.83***	26.68****	0.29
Teacher Compares Students to Those in Other Schools	4.15*	73.12****	0.70
How Successful: Students' Academic Skills	1.07	12.07***	2.46
How Successful: Students' Social Skills	1.90	9.44**	2.26
How Successful: Students' Personal Growth	0.28	6.46*	0.41
How Successful: Students' Occupational Aspirations	0.78	8.56**	2.04
Teachers' Educational Expectations for Students			
Expected Achievement of the School	3.09*	73.56****	3.16*
Expected Achievement of the Class	2.39	27.51****	1.35
Percent You Expect to Finish High School	0.14	10.41***	2.16
Percent Capable of Completing High School	0.23	16.97****	2.48
Percent You Expect to Attend College	0.24	21.23****	7.[illegible]6***
Percent You Expect to Finish College	0.00	10.09**	5.47**
Percent of Class Capable of A's and B's	2.10	17.72****	6.65**
Percent Capable of Completing College	0.87	5.01*	2.86
Teachers' Perceptions of Students' Academic Ambitions			
Percent of Class Wanting to Finish High School	2.03	3.70*	1.18
Percent of Class Wanting to Attend College	1.88	10.40***	7.59***

Table VI.16 (Continued)

Test of Significance on Teacher Questionnaire Items

Variable	F-value for Schools' Performance Relative to Expectation	F-value for Socioeconomic Characteristics of Students	F-value for Interaction
Difference in Perception of Students Expected to Go and Wanting to Go to College	1.82	1.40	3.36*
Teachers' Perception of Principals' Expectations			
Percent Principal Expects to Finish High School	0.59	4.54*	0.30
Percent Principal Expects to Attend College	0.47	15.26****	1.27
Percent Principal Expects to Finish College	0.27	9.28**	2.04
Percent Principal Expects to Get A's and B's	0.14	13.99***	0.21
Principal Compares Students to Those of Other Schools	3.02*	34.53****	0.68
Teachers' Perception of How Much Principal Helps and Observes			
How Often Does Principal Help With Academics	1.23	8.94**	0.48
How Many Hours Does Principal Observe	4.61**	6.48**	0.71
Teachers' Perceptions of Parents' Concern			
Parents Are Concerned with Educational Quality	3.40*	39.75****	3.55*
How Many Parents Expect High School Graduation	0.02	15.55****	1.36
How Many Parents Expect College Graduation	0.22	12.06***	1.83
How Many Parents Don't Care About Grades	1.26	10.15**	4.11*
Number of Parental Contacts Last Month	2.31	2.78	3.50*
Teachers' Rating of School Educational Climate			
How Often Does Teacher Stress College	0.24	4.96*	0.13
How Many Students Do Extra Work	0.36	0.63	3.06*
How Many Students Try to Do Better Than Others	0.67	0.03	3.94*

Table VI.16 (Continued)

Test of Significance on Teacher Questionnaire Items

Variable	F-value for Schools' Performance Relative to Expectation	F-value for Socioeconomic Characteristics of Students	F-value for Inter-action
How Do Teaching Methods Affect Achievement	0.43	1.37	3.03*
Structure of Classroom			
How Often Work With Class as a Whole	3.22*	0.28	0.80
How Often Are All Students on Same Lesson	3.65*	3.48	1.51
Do You Have Teacher's Aide	0.42	10.00**	0.70
How Many Students in Class	4.86**	0.33	0.96
For Students to Achieve, Must Have Quiet	3.09*	0.71	0.13
Do Grade Levels Have Grouping	4.76**	3.75*	0.35
Does Your Classroom Have Grouping	9.32****	9.55**	0.79
Heterogeneous Grouping or Not	3.16*	2.71	2.32
Homogeneous Grouping or Not	4.63**	1.32	1.13
Teachers' Satisfaction With Job			
Would You Rather Teach in Another School	1.80	4.61*	0.09
Days Absent in Fall Semester	0.46	0.48	2.85
Time Spent on Math Activities, Homework			
How Many Minutes Are Spent in Math per Day	5.90**	9.11**	0.19
How Many Days Is Homework Assigned	0.95	6.25**	1.13
Teachers' Academic Self-Concept			
Self-Concept Combined Scale Score	4.47**	4.35*	0.02
Negative Self-Concept Scale Score	3.62*	3.47	0.29
Positive Self-Concept Scale Score	3.59*	3.54	0.25
Teachers' Locus of Control			
Locus of Control Combined Scale Score	0.26	7.24**	1.52
Internal Locus of Control Scale Score	0.73	5.30*	1.90

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

Table VI.17

Selected Means for Teachers' Teaching Backgrounds

A. Means for Experience at Present School[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	3.70	3.14
	Typical	3.85	3.48
	Ineffective	2.81	3.55

[1] 1 = just this year, 2 = 1 to 2 years, 3 = 3 to 4 years, 4 = 5 to 9 years, 5 = 10 to 14 years, and 6 = 15 years or more.

B. Means for Total Years Teaching Third Grade[2]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	5.08	4.80	4.94
	Typical	7.08	7.58	7.31
	Ineffective	3.81	7.48	6.00

[2] These responses are in actual number of years taught.

Table VI.17 (Continued)

Selected Means for Teachers' Teaching Background

C. Means for What Grade Level Are You Teaching[3]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	.03	.28
	Typical	.23	.19
	Ineffective	.11	.15

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[3] These numbers are the percentage of teachers teaching multiple grades.

other hand, the most successful group of teachers of low socioeconomic students (the effective, low socioeconomic group) has the least experience teaching third grade and the least experience at their present school of teachers in their group. Apparently, younger and less experienced teachers are most successful with lower socioeconomic students, while they are the least successful with higher socioeconomic students.

Another interesting aspect of these results is that teachers with the most experience teaching third grade are those in the schools scoring typically for both the high and low socioeconomic groups. While the least experienced teachers are either very successful or very unsuccessful as a group, the most experienced teachers do an average job.

The highest percentage of teachers teaching third grade exclusively are those in the effective, high socioeconomic group. This may reflect a tendency toward greater compartmentalization at these schools.

C. Teachers' Rating of Schools' Reputation

Items included in this group for analysis are (1) the teachers' rating of the school's reputation, (2) the teachers' comparison of students in their school to students in other schools, and (3) four measures of the schools' success in areas such as students' academic skills, social skills, personal growth, and educational/occupational aspirations. Tests of significance for these items are found in Table VI.16, while selected means are located in Table VI.18.

The most obvious result from these analyses is the very strong effect that the socioeconomic characteristics of the students' parents has on the teachers' rating of the schools' reputation. For all six variables included here, teachers from the high socioeconomic group rated their schools better than teachers from the low socioeconomic group.

For two of the items, there was also a significant effect for how the school scored relative to expectation. On the item directly measuring the teachers' rating of the schools' reputation, this effect resulted in an ordering of schools from best to worst as follows: effective, high socioeconomic; typical, high socioeconomic; ineffective, high socioeconomic; effective, low socioeconomic; typical, low socioeconomic; ineffective, low socioeconomic. This ordering occurs even though students from the effective, low socioeconomic group actually outscored students from the ineffective, high socioeconomic group on the EDS tests.

D. Teachers' Educational Expectations for the Students

Eight items are included in this group for analysis: (1) expected achievement of the school, (2) expected achievement

Table VI.18

Selected Means for Teachers' Rating of School's Reputation

A. Means for High Versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Teachers' Rating of Schools' Reputation	1.60	2.33
Teacher Compares Students to Students In Other Schools	2.45	3.29
How Successful: Students' Academic Skills	1.83	2.10
How Successful: Students' Social Skills	2.14	2.42
How Successful: Students' Personal Growth	2.27	2.50
How Successful: Students' Occupational Aspirations	2.36	2.62

B. Means for Teachers' Rating of Schools' Reputation[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	1.44	2.11	1.77
	Typical	1.47	2.24	1.82
	Ineffective	2.08	2.62	2.40

C. Means for Teachers Comparison of Students with Students in Other Schools[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	2.22	3.20	2.70
	Typical	2.48	3.19	2.81
	Ineffective	2.67	3.48	3.15

[1] Smaller numbers indicate a better rating for the school.

of the class, (3) percent you expect to finish high school, (4) percent capable of completing high school, (5) percent you expect to attend college, (6) percent you expect to finish college, (7) percent of class capable of getting A's and B's, and (8) percent capable of completing college. Again, tests of significance for these items are found in Table VI.16, while selected means are located in Table VI.19.

The most striking aspect of these results is the importance of the socioeconomic characteristics of the students' parents in determining the teachers' educational expectations for the students. The socioeconomic variable had a significant effect on all eight student expectation questions, while the schools' performance relative to expectation had a significant effect on only one of the expectation questions. This result is in stark contrast to the findings from analysis of the student questionnaire. As noted above, schools' performance relative to expectation had a significant effect on the students' future educational expectations, while SES did not have a significant effect. Thus, the students' future educational expectations are a function of their schools' performance relative to expectation, while their teachers' future education expectation for them is a function of SES.

The pattern of means for the questions dealing with the teachers' educational expectations show two other interesting trends. First, there is an exaggerated difference in teacher expectation for the ineffective, high socioeconomic group as opposed to the effective, low socioeconomic group. As noted above, the effective, low socioeconomic group actually outscored the ineffective, high socioeconomic group on the EDS tests. The teachers of students in the effective, low socioeconomic group think their students will go much less far in school than teachers from the ineffective, high socioeconomic group think their students will go. This pattern can be seen in Table VI.19.B and C. In fact, the teachers from the effective, low socioeconomic group do not think their students will go as far in school as the teachers from the typical, low socioeconomic group think their students will go.

It is unclear if teachers in the effective, low socioeconomic group are underestimating their students' potential or if they have a more realistic outlook than their teachers from the other groups. The interesting aspect of their response is that having their students score above prediction does not make them more optimistic. Of course, these teachers may be unaware of the relatively good performance of their students, since predicted scores do not typically accompany actual scores.

The second interesting trend in these data can be seen in Table VI.19.C. For several of the variables, there is no difference in teacher expectation between the typical, high

Table VI.19

Selected Means for Teachers' Educational Expectations for the Students

A. Means for High Versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Expected Achievement of the School	2.67	3.46
Expected Achievement of the Class	2.79	3.33
Percent You Expect to Finish High School	1.72	2.06
Percent Capable of Completing High School	1.72	2.19
Percent You Expect to Attend College	3.20	3.79
Percent You Expect to Finish College	3.73	4.13
Percent of Class Capable of A's and B's	3.07	3.60
Percent Capable of Completing College	3.30	3.63

B. Means for Expected Achievement of the School[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.38	3.49
	Typical	2.74	3.38
	Ineffective	2.92	3.53

C. Means for Percent You Expect to Attend College[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.81	4.12
	Typical	3.46	3.44
	Ineffective	3.19	3.95

[1] Smaller numbers indicate a higher expectation for the students, class, or school.

socioeconomic group and the typical, low socioeconomic group. While this may be partially explained by the fact that the typical, high socioeconomic teachers are somewhat pessimistic about their students' futures, the more important finding is the teachers' optimism in the typical, low socioeconomic group. These teachers consistently appear to overestimate how far their students will go in school. As will be noted below, they also perceive more parental concern and a better school climate than one might have predicted.

E. Perceptions of Students' Academic Ambitions

Three items are included in this group for analysis: (1) the teachers' rating of the percent of the class wanting to finish high school, (2) the teachers' rating of the percent of the class wanting to attend college, and (3) the difference in teachers' perception of students expected to go to college and those wanting to go to college. Tests of significance for these items are found in Table VI.16, while means for the items are found in Table VI.20.

The socioeconomic characteristics of the students' parents had a significant effect on the teachers' rating of the percent of the class wanting to finish high school and wanting to attend college. As might be expected, teachers believed that students from higher socioeconomic backgrounds are more academically ambitious than those from lower socioeconomic backgrounds.

There are significant interaction effects for two of the variables: teachers' rating of percent of class wanting to attend college and difference in teachers' perception of students expected to go to college and those wanting to go to college. The group of students rated the least likely to want to finish high school or attend college are those in the ineffective, low socioeconomic group. The interaction on teachers' rating of percent of class wanting to attend college was produced by the absence of any difference in rating for students from the high socioeconomic, typical group and students from the low socioeconomic, typical group. The teachers from the low socioeconomic, typical group believe that a high percentage of their students want to go to college.

The interaction for the difference in teachers' perception of students expected to go and those wanting to go to college is interesting. For the effective and typical levels, teachers perceive many more students in the lower socioeconomic group as wanting to go to college than they expect will be able to go. The reverse holds true for the ineffective level: teachers don't believe that many students in the lower socioeconomic condition want to go to college.

Table VI.20

Means for Teachers' Perceptions of Students' Academic Ambitions

A. Means for Teachers' Rating of Percent of Class Wanting to Finish High School[1]

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	1.51	1.79
	Typical	1.71	1.71
	Ineffective	1.74	2.21
		1.66	1.89

B. Means for Teachers' Rating of Percent of Class Wanting to Finish College[1]

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	2.49	3.24
	Typical	2.81	2.52
	Ineffective	2.48	3.60
		2.64	3.07

[1] 1 = 90% or more, 2 = 70-89%, 3 = 50-69%, 4 = 30-49%, and 5 = less than 30%.

Table VI.20 (Continued)

Means for Teachers' Perceptions of Students' Academic Ambitions

C. Difference in Teachers' Perception of Students Expected to Go to College and Those Wanting to Go to College[2]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	.32	.88
	Typical	.69	.96
	Ineffective	.70	.36

---

[2] Higher scores indicate that the teachers believe more students want to go to college than the teachers expect to go to college.

F. Teachers' Perceptions of Principals' Expectation

Five questions are included in this group for analysis: (1) teachers' perception of percent principal expects to finish high school, (2) teachers' perception of percent principal expects to attend college, (3) teachers' perception of percent principal expects to finish college, (4) teachers' perception of percent principal expects to get A's and B's, and (5) teachers' perception of principals' comparison of students with those in other schools. Once more, tests of significance for the items are found in Table VI.16, while selected means are located in Table VI.21.

The results for these items are very similar to those for the teachers' expectations for the students reported above. The socioeconomic characteristics of the students' parents had a significant effect on all five questions. In all cases, teachers from the high socioeconomic schools believed that their principals expected more from their students than teachers from the low socioeconomic schools believed their principals expected.

There was only one significant effect for schools' performance relative to expectation. Teachers from the ineffective schools believed their principals expected less from their students than those from the other two groups.

A comparison of teachers' expectations with their perceptions of their principals' expectations result in some interesting findings. As noted in Table VI.21.B and C, teachers in the effective, low socioeconomic group think that their principals expect much more from their students than they do. This group of teachers must feel very pushed by the principals to get their students to excel.

G. Teachers' Perception of How Much Principal Observes and Helps

Only two questions were included in this analysis: (1) how often does the principal help with academics; and (2) how many hours does the principal observe your classroom. Means for these two items are found in Table VI.22, while tests of significance are found in Table VI.16.

The socioeconomic characteristics of the students' parents has a significant effect on both items. According to the teachers, principals in the lower socioeconomic group are more likely to help with academics and observe their teaching more often. Thus, principals from lower socioeconomic schools seem to be more directly involved in the academic aspects of their schools. Such direct involvement may be necessary in schools in which students are not expected to do well.

Table VI.21

Selected Means for Teachers' Perceptions of Principals' Expectations

A. Means for High versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Percent Principal Expects to Finish High School	1.91	2.20
Percent Principal Expects to Attend College	2.98	3.58
Percent Principal Expects to Finish College	3.51	3.96
Percent Principal Expects to Get A's and B's	2.78	3.28
Principals' Comparison of Students to Other Schools	2.00	2.62

[1] In all cases, a smaller number indicates that teacher perceives principal as expecting more.

B. Difference in Teachers Expectation and Teachers' Perception of Principals' Expectation of Percent of Students That Will Attend College[2]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	-.01	+.42
	Typical	+.40	+.08
	Ineffective	+.15	+.21

Table VI.21 (Continued)

Selected Means for Teachers' Perceptions of Principals' Expectations

C. Difference in Teachers' Expectation and Teachers' Perception of Principals' Expectation of Percent of Students Capable of Attaining A's and B's[2]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	+.27	+.64
	Typical	+.46	-.11
	Ineffective	-.02	+.59

[2] A positive number indicates that the teachers believe the principal expects more than the teachers expect.

Table VI.22

Means for Teachers' Perception of How Much Principal Helps and Observes

A. Means for How Often Does Principal Help with Academics[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.29	1.71
	Typical	2.17	1.90
	Ineffective	2.44	2.80
		2.27	1.90

[1] 1 = very often, 5 = never.

B. Means for How Many Hours Does Principal Observe[2]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	1.44	2.42	1.90
	Typical	1.16	1.45	1.29
	Ineffective	1.84	2.45	2.21
		1.41	2.07	

[2] Expressed in number of hours for the period from September 1 through December 15, 1982.

There is also a significant effect for schools' performance relative to expectation on the number of hours of observation by the principals. Teachers were observed less frequently (1.29 hours) in the typical level than at the effective (1.90 hours) or ineffective (2.21 hours) levels. The two groups most observed were the effective, low socioeconomic group (2.42 hours) and ineffective, low socioeconomic group (2.45 hours). Teachers in the effective, low socioeconomic group also felt that their principals were the most involved in the academic process of the six groups. This corroborates the investigators' hunch that these principals are very much involved in the academic activities in the schools and push teachers to increase student performance.

H. Teachers' Perceptions of Parents' Concern

Five items are included in this analysis: (1) teachers' perception of parents' concern with educational quality, (2) how many parents expect high school graduation, (3) how many parents expect college graduation, (4) how many parents don't care about grades, and (5) number of parental contacts last month. Selected means for these items are found in Table VI.23, while tests of significance are again located in Table VI.16.

The socioeconomic characteristics of the students' parents had a significant effect on four of the variables measuring teachers' perception of parental concern for education. In all four cases, teachers from the high socioeconomic group believed their students' parents were more concerned about education than those from the low socioeconomic group.

There was a significant effect for schools' performance relative to expectation on the measure of parents' concern with educational quality. Parents in the ineffective group are perceived as less concerned about educational quality than those from either of the other two groups.

There were three significant interaction effects, the means for which are presented in Tables VI.16.B., C., and D. For the first two of these variables (parents' concern with educational quality, how many parents don't care about grades), the parents in the typical, low socioeconomic group are perceived as more concerned about educational quality by the teachers than are the other low socioeconomic parents. Remember, this is also the group in which teachers have relatively high expectations for the students. Teachers in this group perceive a supportive home environment for education, relative to other low socioeconomic schools. In the section on the principal questionnaire, it will be pointed out that students from this group (typical, low socioeconomic) have the highest average daily attendance of the three low socioeconomic groups. This result confirms the teachers' perception of more parental concern by this group.

Table VI.23

Selected Means for Teachers' Perception of Parents' Concern

A. Means for High versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Parents Are Concerned with Educational Quality	1.76	2.51
How Many Parents Expect High School Graduation	1.72	2.11
How Many Parents Expect College Graduation	3.00	3.39
How Many Parents Don't Care About Good Grades	4.36	4.10

[1] For all questions except how many parents don't care, a smaller number indicates more concern. For that item, a smaller number means less concern.

B. Means for Parents' Concern with Educational Quality[2]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	1.49	2.60	2.03
	Typical	1.83	2.20	2.00
	Ineffective	1.96	2.80	2.46
		1.76	2.51	

[2] 1 = strong concern, 5 = not much concern.

Table VI.23 (Continued)

Selected Means for Teachers' Perception of Parents' Concern

C. Means for How Many Parents Don't Care About Grades[3]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	4.41	3.91
	Typical	4.30	4.36
	Ineffective	4.44	3.98

[3] 1 = almost all parents don't care, 5 = almost none don't care.

D. Means for Number of Parental Contacts Last Month[4]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	4.38	3.56
	Typical	3.78	3.74
	Ineffective	4.07	4.20

[4] Expressed in terms of actual number of contacts.

It is also interesting to note that teachers from the effective, low socioeconomic and the ineffective, low socioeconomic groups rate parents to be about equally unconcerned with education. The effective, low socioeconomic group of teachers do not perceive their students' parents as being very concerned about quality education.

The two groups with the highest number of parental contacts were the effective, high socioeconomic and ineffective, low socioeconomic ones. It is safe to say that reasons for parental contacts are probably very different for these two groups of schools.

I. Teachers' Rating of School Educational Climate

Four items were included in this analysis: (1) how often do teachers stress college, (2) how many students do extra work, (3) how many students try to do better than others, and (4) how much do teaching methods effect achievement. Tests of significance for these items are found in Table VI.16, while selected means are located in Table VI.24.

The socioeconomic characteristics of the students' parents have a significant effect on how often the teacher stresses college. Teachers in the low socioeconomic schools say that they stress college more than teachers from the high socioeconomic group. This result is similar to that found on the students' questionnaires, where students felt more academic push in the low socioeconomic schools.

There are three significant interactions on these variables, the means for which are presented in Table VI.24.A, B., and C. Students in the low socioeconomic group are perceived as trying harder (how many students do extra work, how many students try to do better than others) than those in the high socioeconomic group in all cases, except for the ineffective group. Teachers in the ineffective, low socioeconomic group do not perceive their students as working very hard.

Teachers from the low socioeconomic group think their teaching methods affect achievement more than teachers from the high socioeconomic group, except for the effective group. Teachers in the typical, low socioeconomic group believe that their methods have the most effect on student's achievement.

J. Teachers' Perception of Structure of Classroom

Nine items are included for analysis in this group: (1) how often do you work with the class as a whole, (2) how often are all your students on the same lesson, (3) do you have a teacher's aide, (4) how many students are in your class, (5) do students need to have quiet in order to achieve, (6) do grade levels in your school have any kind of grouping, (7) are students in your classroom grouped at all, (8) is your

Table VI.24

Selected Means for Teachers' Rating of School Educational Climate

A. Means for How Many Students Do Extra Work[1]

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	3.54	3.42
	Typical	3.44	3.28
	Ineffective	3.07	3.67

B. Means for How Many Students Try to Do Better Than Others[1]

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	3.11	2.82
	Typical	2.97	2.61
	Ineffective	2.52	3.05

[1] 1 = almost all of the students, 5 = none of the students.

C. Means for How Do Teaching Methods Affect Achievement[2]

Socioeconomic Characteristics of Students' Parents

School's Performance Relative to Expectation		High SES	Low SES
	Effective	1.38	1.51
	Typical	1.55	1.22
	Ineffective	1.52	1.43

[2] 1 = methods have a great deal of effect on student's achievement, 5 = methods have no effect at all.

Table VI.25

Selected Means for Teachers' Perception of Structure of Classroom

A. Means for Effective, Typical, Ineffective Schools[1]

Variable	Effective	Typical	Ineffective
How Often Do You Work with Class as a Whole	3.97	4.15	3.90
How Often Are All Students on Same Lesson	3.60	3.87	3.50
How Many Students Are in Your Class	22.71	24.44	23.67
For Students to Achieve, They Must Have Quiet	1.83	2.13	1.90
Do Grade Levels Have Grouping	.81	.69	.58
Does Your Classroom Have Grouping	.85	.62	.88
Heterogeneous Grouping or Not	.52	.71	.55
Homogeneous Grouping or Not	.50	.29	.48

[1] For the questions on how often you work with class as a whole and how often are students on same lesson, 1 = never and 5 = almost always. For students to achieve, a response of 1 = strongly agree, while 5 = strongly disagree. For the last four items, the responses are given in percentages.

B. Means for High Versus Low Socioeconomic Schools[2]

Variable	High SES	Low SES
Do You Have a Teacher's Aide	1.82	1.64
Do Grade Levels Have Grouping	.64	.74
Does Your Classroom Have Grouping	.66	.86

[2] For the teacher's aide question, 1 = yes and 2 = no. For the last two items, the responses are given in percentages.

class heterogeneously grouped, and (9) is your class homogeneously grouped. Selected means for these items are found in Table VI.25, while tests of significance are located in Table VI.16.

The schools' performance relative to expectation had a significant effect on eight of the items. For two of the items (how often do you work with class as a whole, how often are students on the same lesson), the typical group reported less individualized instruction than either the effective or the ineffective group. This may be partially due to the larger class size (24.44) in the typical group than in the effective (22.71) or ineffective (23.67). A more important reason may be that less variance exists in achievement levels among students in the typical group than in the other two groups. The effective group may require more individualized instruction for high achieving students, while the ineffective group may require more individualized instruction for low achieving students. The fact that the typical teachers report more heterogeneous grouping while the effective and ineffective groups report more homogeneous grouping according to ability verifies this supposition.

There appears to be a more relaxed atmosphere in the typical schools. For instance, teachers in these schools are the least likely to say that students must have quiet in order to achieve.

The results for grade level and classroom grouping are also interesting. When asked what kind of grouping occurs across the grade level, the effective schools had the most grouping and the ineffective had the least. When asked about grouping within the class, the effective and ineffective schools had the most grouping. Thus, effective schools had grouping within grade levels and classrooms, while the ineffective schools had grouping within classrooms but not necessarily within grade levels. The typical schools had the least grouping of the three. The students' parents' socioeconomic background had a significant effect on three of the variables. Teachers in low socioeconomic schools reported having more teachers' aides, with teachers in the effective, high socioeconomic group being the most likely to have an aide. Teachers in the high socioeconomic schools reported less grouping at the grade and the classroom level. These results are very similar to those reported by the students.

K. Teachers' Satisfaction with Job

Only two items were included in this group for analysis: (1) would you rather teach in another school, and (2) how many days were you absent in the fall semester. Tests of significance for these items are found in Table VI.16, while means are located in Table VI.26.

Table VI.26

Means for Teachers' Satisfaction with Job

A. Percentage Who Would Rather Teach in Another School

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.06	.12
	Typical	.02	.12
	Ineffective	.11	.21
		.05	.15

B. Days Absent in Fall Semester

Socioeconomic Characteristics of Students' Parents

		High	Low
School's Performance Relative to Expectation	Above Predicted	2.86	2.03
	At Predicted	2.39	2.63
	Below Predicted	2.19	3.51

There was a significant effect for the students' parents' socioeconomic characteristics on percentage of teachers preferring to teach in another school. Fifteen percent of the teachers from the low socioeconomic schools wanted to teach in other schools, while only 5 percent from the high socioeconomic schools wanted to teach elsewhere. Twenty-one percent of the teachers in the ineffective, low socioeconomic group wanted to teach in another school.

While none of the factors had a significant effect on number of days absent in the fall semester, the interaction was marginally significant [$\underline{F}(2,232)=2.85$, $\underline{p}<.06$]. The pattern of means presented in Table VI.26.B is intriguing. The teachers with the least absences were from the effective, low socioeconomic group (2.03 days), while the teachers from the ineffective, low socioeconomic group had the most absences (3.51 days). If teachers' commitment can be measured in being on the job, then that commitment may be reflected in relative student performance.

L. Time Spent on Math Activities and Homework

Again, only two items were included in this group for analysis: (1) how many minutes are spent in mathematics per day and (2) how many days is homework assigned. Tests of significance for these items are in Table VI.16, while means are located in Table VI.27.

The students' parents' socioeconomic characteristics had a significant effect on both of these variables. Teachers from the low socioeconomic schools report more time spent on math and more days homework assigned than those from the high socioeconomic schools. These results corroborate greater teacher push in the lower socioeconomic schools.

Schools' performance relative to expectation had a significant effect on time spent in mathematics. Students from the typical group spent less time in mathematics than those from the effective or ineffective groups according to their teachers. The effective, low socioeconomic group spent the most time in math (67.42 minutes per day), while the typical, high socioeconomic group spent the least time (47.5[illegible] minutes). This result holds true for number of days homework was assigned: the effective, low socioeconomic teachers report the most (3.85 days), while the typical, high socioeconomic report the least (3.29 days).

M. Teachers' Report of Self-Concept

The teachers were asked 10 questions which measured aspects of their self-concept. These items were questions 88-97 (See Appendix 5). Three scales were constructed from these items: (1) a combined self-concept scale, which included responses to all of the questions; (2) a positive self-concept scale,

Table VI.27

Means for Time Spent on Math Activities and Homework

A. Means for Minutes Spent on Math Activities

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	56.62	67.42	61.71
	Typical	47.50	55.83	51.50
	Ineffective	56.92	63.20	60.69
		52.57	61.42	

B. Means for Number of Days Homework is Assigned

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES
School's Performance Relative to Expectation	Effective	3.44	3.85
	Typical	3.29	3.81
	Ineffective	3.74	3.79
		3.44	3.82

Table VI.28

Means for Teachers' Report of Self-Concept

A. Means for Self-Concept Combined Scale[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	17.40	18.83	18.10
	Typical	15.88	17.06	16.42
	Ineffective	15.22	16.45	15.95
		16.19	17.36	

B. Means for Negative Self-Concept Scale Score[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	20.87	19.91	20.40
	Typical	21.53	21.19	21.37
	Ineffective	22.07	21.23	21.56

C. Means for Positive Self-Concept Scale Score[1]

Socioeconomic Characteristics of Students' Parents

		High SES	Low SES	
School's Performance Relative to Expectation	Effective	8.27	8.74	8.50
	Typical	7.41	8.25	7.79
	Ineffective	7.30	7.68	7.52

[1] For the combined and positive self-concept scale, a smaller number means more self-esteem. For the negative self-concept scale, a larger number means more self-esteem.

which included responses to the items that made positive self-concept statements; and (3) a negative self-concept scale, which included responses to the items that made negative self-concept statements. Tests of significance for scores on these scales are located in Table VI.16, while means are found in Table VI.28.

There was a significant effect for the students' parents' socioeconomic characteristics on the combined self-concept scale, such that teachers from the higher socioeconomic schools had higher self-esteem than those from the lower schools. The effect of this variable was marginally significant for both the negative scale [$F(1,242)=3.47$, $p<.06$] and the positive scale [$F(1,242)=3.54$, $p<.06$]. On both these scales, teachers from higher socioeconomic schools also displayed higher self-esteem.

Schools' performance relative to expectation had a significant effect on all three scale scores. Contrary to what might have been predicted, teachers from the schools which scored below expectation had the highest self-esteem. Teachers from the schools which scored above expectation had the lowest self-esteem. Of the six groups of teachers, teachers from the effective, low socioeconomic group had the lowest self-esteem while those from the ineffective, high socioeconomic group had the highest self-esteem. Obviously, doing a better job with the resources available does not translate into higher self-esteem for the effective, low socioeconomic group. This may be due to a number of factors: (1) the teachers may not know that they are doing a good job relatively speaking, since they may have an inaccurate perception of how well their students should perform; (2) the teachers in the effective, low socioeconomic group may have very high expectations for their students because many of their parents were also teachers; and (3) the teachers from the ineffective, high socioeconomic groups may be defensively reporting higher self-esteem than they actually feel. In general, the teachers responded on the positive end of the self-esteem scale--the ineffective, high socioeconomic group responded at the extremely positive end of the scale.

N. Teachers' Locus of Control

The teachers were asked 10 questions which measured aspects of their academic locus of control. These items were questions 78-87 (See Appendix 5). Three scales were constructed from these items: (1) a combined locus of control scale, which included responses to all of the items; (2) an internal locus of control scale, which included internally oriented statements; and (3) an external locus of control scale, which included externally oriented statements. Tests of significance for scores on these scales are located in Table VI.16.

There were significant effects for students' parents' socioeconomic characteristics on the locus of control combined scale score and internal scale score. In both cases, teachers from the higher socioeconomic schools had a higher internal locus of control than teachers from the lower socioeconomic school. On both scales, teachers from the ineffective, high socioeconomic schools were the most internal, while teachers from the ineffective, low socioeconomic schools were the most external.

V. Comparison of Students' and Teachers' Expectations

The students and teachers were asked questions about how far the students expected or were expected to go in school. The investigators decided to construct scales which would compare their responses, to see for instance if students or teachers had higher expectations. In order to do this, responses to Question 4 from the student questionnaire was recoded so that its responses paralleled those from Questions 21-23 of the teacher questionnaire (See Appendices 4 and 5). Tests of significance for the original items and a constructed scale comparing teacher and student responses are found in Table VI.29. Means are located in Table VI.30.

As noted previously, students' future educational expectations are more a function of their schools' performance relative to expectation, while their teachers' future education expectations for them are a function of SES. A significant interaction effect on percentage of students expecting to go to college was found. This finding is a result of students from the ineffective, high socioeconomic group having a lower educational expectation than the students from the ineffective, low socioeconomic group. In general the high socioeconomic students expected to go further: the ineffective group was the exception.

Significant interactions, previously described, occurred on percentage of students the teachers expected to go and to finish college. These interactions were produced by the lack of difference in expectation by the typical, high socioeconomic and typical, low socioeconomic groups. The typical, high group of teachers was more pessimistic about their students' futures than might be expected, while the typical, low group was more optimistic.

Some interesting results are found when one compares teacher and student expectation. The most striking result is that students expect to go further in school than their teachers expect them to go. This disparity increases from finishing high school to going to college to finishing college. Students are unrealistically optimistic about their educational futures, while teachers tend to be more realistic. There was only one condition in which this pattern did not occur: the expectation that a higher percentage of their students would finish high school was held by more teachers than students in the ineffective, high socioeconomic group. The

Table VI.29

Tests of Significance on Comparison of Students' and Teachers' Expectations

Variable	*F*-value for Schools' Performance Relative to Expectation	*F*-value for Socioeconomic Characteristics of Students	*F*-value for Interaction
Student Expectation			
Percentage of Students Expecting to Finish High School	3.85*	0.24	0.93
Percentage of Students Expecting to Go to College	2.70	0.93	4.60**
Percentage of Students Expecting to Finish College	1.54	0.05	1.87
Teacher Expectation			
Percentage of Students Teachers Expect to Finish High School	0.14	10.41***	2.16
Percentage of Students Who Expect to Go go College	0.24	21.23****	7.66***
Percentage of Students Teachers Expect to Finish College	0.00	10.09**	5.47**
Teacher - Student Expectation			
Difference in Percentage Finishing High School	0.73	6.13**	1.50
Difference in Percentage Going to College	0.44	13.61***	9.09***
Difference in Percentage Finishing College	0.45	7.42**	6.10**

* $p<.05$
** $p<.01$
*** $p<.001$
**** $p<.0001$

Table VI.30

Means for Comparison of Student and Teacher Expectations[1]

Student Expectation

Percentage of Students Expecting to Finish High School

		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.43	1.56
	Typical	1.52	1.62
	Ineffective	1.81	1.70

Percentage of Students Expecting to Go to College

		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.95	2.22
	Typical	2.07	2.38
	Ineffective	2.52	2.20

Percentage of Students Expecting to Finish College

		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.46	2.50
	Typical	2.56	2.80
	Ineffective	2.74	2.53

Teacher Expectation

Percentage of Students Teachers Expect to Finish High School

		High SES	Low SES
School's Performance Relative to Expectation	Effective	1.54	2.18
	Typical	1.83	1.92
	Ineffective	1.74	2.13

Percentage of Students Teachers Expect to Go to College

		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.81	4.12
	Typical	3.46	3.44
	Ineffective	3.19	3.95

Percentage of Students Teachers Expect to Finish College

		High SES	Low SES
School's Performance Relative to Expectation	Effective	3.38	4.44
	Typical	3.98	3.97
	Ineffective	3.67	4.18

Teacher - Student Expectation[2]

Difference in Perception on Percentage Finishing High School

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.11	.62
	Typical	.28	.31
	Ineffective	-.07	.38

Difference in Perception on Percentage Going to College

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.86	1.88
	Typical	1.37	1.06
	Ineffective	.67	1.74

Difference in Perception on Percentage Finishing College

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.92	1.94
	Typical	1.40	1.09
	Ineffective	.93	1.64

[1] A response of one = 90 percent or more; a response of five = less than 30 percent.

[2] Positive numbers mean students expect more than teachers.

students in this condition tend to be unambitious compared with the other high socioeconomic groups, while their teachers maintain high expectations.

The group for which there is the most disparity between teacher and student expectation is the effective, low socioeconomic group. The students in this group have relatively high expectations, while their teachers expect them to go the least far of all the students. The teachers in this group are apparently able to help instill high expectations in their students while they expect not nearly as much.

In general, there is a greater disparity between student and teacher expectation for the low socioeconomic schools than for the high socioeconomic schools. This is understandable since all students have generally high expectations, while SES has a large effect on teachers' expectations. This tendency does not hold for the typical groups, where the teachers from low socioeconomic schools are more optimistic about their students' futures than might be expected.

VI. Results From Analysis of Principals' Questionnaires

Principals from 74 of the 76 schools in the study completed the Principal Questionnaire. The questionnaire included 78 items. A copy of the questionnaire can be found in Appendix 6. As with the Student and Teacher data, two-way analyses of variance (ANOVAs) were performed on each quantified variable and on several aggregated variables. Again, the two independent variables were socioeconomic status (SES: high vs. low), and mean school achievement (effective, typical, or ineffective levels of achievement).

The items are discussed in 11 groups. The first 10 sets of items were grouped by the individual item's loadings on the factor analysis of the principal questionnaire data (see Chapter Five). Items loading high on the first factor, "Future Academic Expectations for Students," will be discussed together, and so forth. In the discussion that follows, more time will be spent on the first four groups of items than the remainder of the items because they were the most important groups in the factor analysis. On occasion, some non-significant, but interesting results will be discussed. The groups of items are as follows:

(1) future academic expectations for students
(2) school success and students' academic ability
(3) parents' concern about grades and education
(4) hours spent working
(5) principal working with teachers
(6) principals' attitudes and locus of control
(7) years experience
(8) presence of teacher and principal
(9) principals' self-concept
(10) parental support
(11) other items

Table VI.31

Test of Significance on Principal Questionnaire Items

Variable	F-value for Schools' Performance Relative to Expectation	F-value for Socioeconomic Characteristics of Students	F-value for Interaction
Future Academic Expectations for Students			
Number of Parents Expecting High School	2.61	9.29**	1.27
Number of Parents Expecting College	2.08	13.30***	6.29**
Percent You Expect to Finish High School	3.92*	8.71**	3.58*
Percent You Expect to Attend College	1.75	15.70***	2.28
Percent You Expect to Finish College	1.28	6.85*	.54
Rating of Students Compared to Others	1.53	13.45***	1.19
School Success and Students' Academic Ability			
How Successful: Students' Academic Skills	3.54*	11.61**	1.14
How Successful: Students' Social Skills	1.80	4.31*	2.38
How Successful: Students' Personal Growth	.27	5.56*	1.32
How Successful: Students' Educational Aspirations	.96	4.20*	.94
Rating of School's Reputation Among Educators	.77	8.52*	.51
Rating of School on Achievement	1.94	14.10***	.02
Student Achievement Potential	.44	10.36**	.01
Parents' Concern About Grades and Education			
Parents Concerned About Quality Education	.22	8.98**	1.04
Number of Parents Not Caring About Low Grades	1.11	8.20**	.23
Principals' Attitudes and Locus of Control			
Teacher's Highest Priority - Students' Self-Concept	4.95**	2.44	1.24

Table VI.31 (Continued)

Variable	F-value for Schools' Performance Relative to Expectation	F-value for Socioeconomic Characteristics of Students	F-value for Interaction
Parental Support			
Average Daily Attendance	1.44	13.55***	.99
How Many Families Attend PTA Meeting	.66	28.20****	1.54
Other Items			
Estimated Minutes per Day on Reading	3.70*	1.56	.18
If Staff Did Its Job Students Would Achieve	.00	.87	4.79*
Level of Achievement Which Can be Expected of Students	.24	9.96**	1.19
How Many Teachers Individualize Instruction	.33	.09	4.37*
Percentage of Principals Who Make Hiring Decisions on Teachers	2.59	1.89	.54

* $p<.05$

** $p<.01$

*** $p<.001$

**** $p<.0001$

A summary of the significant differences in the principal questionnaire items is found in Table VI.31.

A. Future Academic Expectations for Students

As can be seen in Table VI.32, six questions which dealt with future academic expectations for students were significantly affected by SES. For example, principals from high SES schools expected 40 percent of their students to attend college. Principals at low SES schools indicated that only 30 percent of their students would attend college. For all six questions, principals from high SES schools indicated that they or the students' parents expected greater academic achievement that principals from low SES schools indicated.

There was only one main effect for performance relative to expectation. Principals at schools whose students scored typically expected more of their students to finish high school than did their peers at effective or ineffective schools.

The group which was consistently most cautious in estimating how far their students would go academically was the principals of effective, low SES schools. This group's cautious expectations resulted in the significant interaction patterns found in Table VI.32.B and C.

B. School Success and Students' Academic Ability

As indicated in Table VI.33, principals from high SES schools rate their schools as more successful and their students as having higher academic ability than do principals from low SES schools.

Schools' performance relative to expectation had a significant effect on only one variable: the principals' rating of schools' success in enhancing student academic skills. Principals in effective schools rated those schools much more successful than did principals in the other schools.

As is the case with the teachers' responses, principals' attitudes about school success and student academic ability are more influenced by SES than by the students' performance relative to expectation.

C. Parents' Concern About Grades and Education

As indicated in Table VI.34, high SES parents are perceived by principals as being more concerned about quality education than low SES parents. Similarly, more high SES parents are perceived as caring about grades than low SES parents.

Table VI.32

Selected Means for Future Academic Expectations for Students

A. Means for High Versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Number of Parents Expecting High School	1.42	1.97
Rating of Students Compared with Others	2.61	3.12
Percent You Expect to Attend College	3.30	4.24
Percent You Expect to Finish College	3.92	4.57

B. How Many of the Parents of Students in This School Expect Their Children to Complete College?[1]

		Socioeconomic Characteristics of Students' Parents	
		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.45	3.92
	Typical	2.93	3.36
	Ineffective	3.55	3.54
		2.97	3.67

Table VI.32 (Continued)

C. What Percent of the Students in This School Do You Expect to Complete High School?[1]

		Socioeconomic Characteristics of Students' Parents		
		High SES	Low SES	
School's Performance Relative to Expectation	Effective	1.64	2.85	2.29
	Typical	1.53	1.73	1.62
	Ineffective	1.82	2.00	1.92
		1.65	2.22	

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[1] For all items a lower number indicates a higher expectation or rating.

Table VI.33

Selected Means for School Success and Students' Academic Ability[1]

A. Means for High Versus Low Socioeconomic Schools

Variable	High SES	Low SES
How Successful: Students' Social Skills	1.81	2.14
How Successful: Students' Personal Growth	1.89	2.27
How Successful: Students' Educational Aspirations	2.28	2.59
Student Achievement Potential	1.35	1.95
How Successful: Students' Academic Skills	1.67	2.11
Rating of School on Achievement	1.81	2.59
Rating of School's Reputation Among Educators	1.54	2.13

B. Means for Effective, Typical, and Ineffective Schools[1]

Variable	Effective	Typical	Ineffective
How Successful: Students' Academic Skills	1.67	2.04	1.96

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[1] For all items a lower number indicates more perceived success or a higher rating of the school.

Table VI.34

Selected Means for Parents' Concern About Grades and Education[1]

Variable	High SES	Low SES
Parents Concerned About Quality Education	1.59	2.19
Number of Parents Not Caring About Low Grades	4.73	4.27

[1] For parents concerned about quality education 1 = strongly agree, 5 = strongly disagree. For the number of parents not caring about low grades 1 = almost all of the parents, 5 = almost none of the parents.

D. Hours Spent Working

There were neither SES nor achievement relative to expectation differences between groups on the three variables in this factor. The investigators attribute the lack of significant differences on these items to large differences in how principals interpreted the items. The items were deliberately left open ended (e.g. "How many hours per month do you spend observing classes? How many hours per month do you spend advising teachers on matters directly related to student academic progress? How many hours per month do you spend advising teachers on other matters?") Principals gave such a tremendous range of responses that for some principals the sum of the three items exceeded the total number of hours in a month. The amount of error variance on the items apparently eliminated any potentially relevant interpretation of the data.

E. Principal Working with Teachers

There were no significant differences of interest in this group.

F. Principals' Attitudes and Locus of Control

As indicated in Table VI.35, principals in ineffective schools were the most likely to strongly agree with the statement, "A teacher's highest priority should be the student's self-concept." It is worth noting that the principals in ineffective schools were also the most likely to strongly agree with the statement, "A teacher's high priority should be the student's reading and math achievement." This double binding of teachers by principals was particularly prominent in the high SES, ineffective schools.

G. Years of Experience

There were no significant effects of the independent variables on total years of experience or current school experience of the principals. The average principal in the study reported that she/he had been a principal at that particular school for just under 10 years and had total experience in principalships of slightly more than 10 years.

H. Presence of Teacher and Principal

Two seemingly unrelated items came together to form this factor. The items are "How often are you called out of your building for part or all of a day because of administrative meetings, community events, or other functions?" and, "How many working days per year is this school's average teacher absent from school?" Apparently, the more the principal is gone, the more the teachers are absent. Neither of the independent variables had significant effects on these items.

Table VI.35

Means for Principals' Attitudes and Locus of Control[1]

Variable	Effective	Typical	Ineffective
A Teacher's Highest Priority Should be the Students' Self-Concept	2.00	2.15	1.50

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[1] 1 = strongly agree, 5 = strongly disagree.

I. Principals' Self-Concept

Although an aggregate of items relating to both positive and negative aspects of principals' self-concept emerged, neither positive nor negative principals' self-concept was affected by SES or performance relative to expectation.

J. Parental Support

Both of the two items in this group, average daily attendance and number of families that attend PTA, are affected by SES. High SES parents send their students to school more regularly and are more likely to attend PTA. See Table VI.36 for selected means for these items.

K. Other Items

In this section items which did not load highly on any of the previous factors but which nonetheless produced interesting results will be briefly discussed. See Table VI.37 for selected means for these items.

The principals in effective schools estimated that their teachers spent the most time in reading-related activities. The effective high SES principals estimated that their teachers spent the greatest amount of time per day in reading (mean = 190.45 min./day) and the principals of low SES, ineffective schools estimated that their teachers spent the least time in reading (mean = 130.77 min./day). It is difficult to imagine that an added hour a day on reading would not make a difference in student achievement. Though the difference was not statistically significant on the minutes spent on mathematics questions, it is worth noting that the principals in the low SES, ineffective schools reported that their teachers spent the least time in math-related activities as well.

SES had a strong effect on principals' perception of students' expected level of achievement. Consistent with previous results, principals in high SES schools expected more achievement from their students than did principals from low SES schools.

An interaction effect occurred on the variable measuring how much individualized instruction the principal perceived in her/his school. In the low SES group, the most effective schools had the most individualized instruction. The opposite was true for the high SES schools.

Another significant interaction occurred on responses to the statement "If the teachers and other staff members in this school were all doing their job well, nearly all of the students would achieve at grade level." For the effective and typical schools, the high SES principals are more likely

Table VI.36

Means for Parental Support[1]

Variable	High SES	Low SES
Average Daily Attendance	3.14	4.19
How Many Families Attend PTA	3.59	2.49

[1] For average daily attendance, 1 = over 98% and 5 = 85% or less. For PTA attendance, 1 = no PTA, 5 = almost all of them.

Table VI.37

Selected Means for Other Variables

A. Means for Effective, Typical, and Ineffective Schools

Variable	Effective	Typical	Ineffective
Estimated Minutes per Day on Reading	181	151	142

B. Means for High Versus Low Socioeconomic Schools[1]

Variable	High SES	Low SES
Level of Achievement Which Can be Expected of Students	2.66	3.32

[1] 1 = much above the national norm, 5 = much below the national norm

C. Mean for the Extent to Which the Third Grade Teachers Individualize the Instructional Programs for Their Students[2]

		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.91	2.08
	Typical	2.47	2.55
	Ineffective	1.80	2.77

[2] 1 = all plan individual programs for most students, 5 = all teachers have common instructional programs for their students

Table VI.37 (Continued)

D. Means for If the Teachers and Other Staff Members in This School Were All Doing Their Job Well, Nearly All of the Students Would Achieve at Grade Level[3]

		High SES	Low SES
School's Performance Relative to Expectation	Effective	2.73	3.38
	Typical	2.60	3.55
	Ineffective	3.50	2.62

[3] 1 = strongly agree, 5 = strongly disagree

E. Means for the Percentage of Principals Who Make Hiring Decisions On Teachers

		High SES	Low SES
School's Performance Relative to Expectation	Effective	.08	.23
	Typical	.00	.09
	Ineffective	.00	.00

to agree with this statement. This pattern is reversed in the ineffective schools, indicating that the high SES, ineffective principals are less likely to blame their staff for underachievement.

A marginally significant main effect ($p<.08$) for performance relative to expectation occurred on the variable measuring the percentage of principals who make hiring decisions on teachers. Twenty-three percent of the principals in the affective, low SES schools hire their teachers. No other group had higher than 9 percent of its principals with this power.

CHAPTER SEVEN

CONCLUSIONS

I. Introduction

The results of the LSES Phase Two can be summarized very simply: schools make a large difference in student achievement in Louisiana beyond the effect of the socioeconomic characteristics of students in those schools. The cynical and erroneous statements from decades past that students' socioeconomic status was the only stable predictor of academic success can now be firmly rejected. In the Louisiana School Effectiveness Study it was found that students in schools in economically disadvantaged areas achieve better than many in economically more affluent areas. Within any given economic stratum, substantial variation in school level achievement is being documented. These differences will have enormous long-term effects on the individual and the society.

The first goal of the Louisiana School Effectiveness Study is to identify school level attitudes and behaviors which predict students' achievement. A longer-term goal of the study is to find ways to help local schools and school systems alter their professional staffs' attitudes and behaviors in ways which both increase their professional staffs' job satisfaction and increase their students' achievement.

This concluding chapter is divided into two sections. First is a group of suggestions for action which can be drawn from the study's progress to date. This is followed by a brief summary of the LSES activities to date and an outline of the researchers' proposed activities during the next two years.

The research team feels strongly that, taken as a group, the recommendations based on the LSES can provide a framework for improvement in many schools. The value of any one recommendation to a particular school will obviously vary depending on the current performance level of the school's staff and students relative to the suggested activity. Members of the research team visited some schools that impressed them as being extremely well administered and highly effective. Yet, invariably, the principal expressed the belief that his/her school could improve in some area. While the researchers hope that this report will serve as a catalyst for some changes, their recommendation to colleagues in the school districts is not to change programs that obviously are effective. If the recommendations of the LSES researchers make sense to a particular set of local administrators, teachers, and parents, then perhaps these people will implement them.

II. Recommendations

Recommendations based on the data from the Second Phase of the LSES are presented in three levels: the level of the school, local system, and the state.

A. School Level Recommendations

Recommendation 1: Principals and teachers should convey a clear academic mission to students and parents.

Rationale: Schools that obtained the lowest student achievement provided a mixed message on goals (e.g. "Achievement is most important....and so is student self-concept and social development and....) Everything can't be most important. Taxpayer polls consistently indicate that parents want schools to teach the academics.

In the Second Phase of the LSES, schools in which students thought teachers cared a lot about grades achieved more than those who did not, regardless of SES.

Recommendation 2: Principals and teachers should actively elicit parental support and involvement.

Rationale: In this study, regardless of parents' SES, schools that elicited more active parental support and involvement achieved more. Unfortunately many of the schools in Louisiana need to broaden their relationships substantially with their community. Perhaps specialists in this field should be employed by some school systems to ensure better community/school relations.

Recommendation 3: Principals and teachers should hold high, but realistic expectations for students' achievement.

Rationale: In the LSES, particularly in less affluent schools, students of teachers who held high, specific, and reasonable expectations (ex. "You can learn the material in our third grade texts") achieved higher than was predicted.

Recommendation 4: Principals and teachers should allot and use substantial blocks of uninterrupted time for the teaching of reading and math.

Rationale: In this and many other studies, uninterrupted time spent by teachers in interactive teaching of reading and math predicted student achievement.

Recommendation 5: Schools, with more or less affluent student bodies, need to use somewhat differing strategies to increase student achievement.

Rationale: One of the major findings of the study was that effective schools whose students were from relatively underprivileged backgrounds were substantially different from effective schools in middle class contexts.

Schools in middle class contexts whose students achieved exceptionally well tended to share the following characteristics:

(a) Teachers were in frequent contact with parents and perceived parents as being highly concerned with quality education.

(b) Teachers reported having high present and future academic expectations for their students.

(c) Teachers accepted responsibility for student outcomes and actively worked with students toward the realization of these higher expectations. This attitude was reflected in student reports noting that teachers cared about them and pushed them to achieve academically.

(d) These schools had the highest percentage of teachers teaching third grade exclusively.

(e) The students apparently internalized the high expectations expressed by teachers and parents. Students in high achieving, affluent schools had higher expectations for themselves than did their peers in equally affluent schools with lower achievement. The general climate from the effective, affluent schools was one of concern for excellence from all the major participants--principals, faculty, students and parents.

Schools in less affluent contexts that got exceptionally high achievement from their students tended to share these characteristics:

(a) While the principals and teachers had modest long-term expectations for their students' achievement, particularly in regard to higher education, they held firm academic expectations for their students while at their school.

(b) Teachers reported spending more time on reading and math and assigning more homework than either of the other two low SES groups.

(c) Students perceived teachers as pushing them academically. They also reported receiving more help from their teachers than did students in less successful low SES schools.

(d) Students perceived their teachers as having high expectations for them in their current classrooms.

(e) Teachers reported that principals visited their classrooms frequently.

(f) The teachers in this group were the youngest and least experienced of the low SES groups.

(g) The teachers in this group were the most likely of all the teachers to have teacher's aides.

These less affluent, successful schools had principals who motivated teachers who, in turn, motivated students. The ability to instill in students a belief that they can learn is critical in low SES schools.

Recommendation 6: Teachers and principals need to be made aware of the variables they can control in their schools to affect student achievement.

Rationale: Teachers' and, to a lesser extent, principals' perceptions of the successfulness of their school were more strongly tied to the socioeconomic status of students' parents than to their own actions. Yet this research team found many nonaffluent schools whose students were achieving more than many of their more affluent peers. Economic background of students matters, but in this study it proved to be a less powerful predictor of student achievement than a schools' climate of caring about academics and success.

It is simply incorrect to believe that SES by itself produces achievement. School climate is as important a predictor of achievement, and it is something the faculty creates. Further education of teachers must occur on this point, or mediocrity and failure in school will continue for many of the less affluent children. This further education could occur through a well-orchestrated series of workshops, college courses, and other learning experiences aimed at changing teachers' attitudes and perceptions.

B. Local System Level Recommendations

Recommendation 7: Principals should have substantial voice in the hiring of teachers in their schools.

Rationale: Principals in schools achieving more than predicted tended to have greater voice in the hiring of teachers. Local school systems should give their principals a vote in the selection of teachers. Principals should receive training in recruitment and other management tasks. The Administrator's Leadership Academy, currently proposed in Louisiana, might provide the type of training required to enable principals to select the kind of teachers who would be the most successful at their school.

Recommendation 8: Local school systems should develop modern Management Information Systems (MIS).

Rationale: If local administrators are to make decisions that are at least partially data-based, they must have ready access to multifaceted, integrated data bases. School systems were quite generous in their provisions of data to the LSES researchers, but often local employees had a great deal of difficulty providing rudimentary data to the team within a reasonable time frame. With a fully integrated MIS, an administration could provide its board, its Parish Government, the State Department of Education, and its own staff, accurate, specific data on one day's notice. Superintendents are under ever-increasing demands for information. Computerized, integrated MISs can help them meet the demands of their difficult jobs. There is no doubt that an efficient MIS helps many businesses run more effectively; it is time that our local school systems provide this same capability for our schools.

Recommendation 9: Local systems should continue their progress toward total racial integration of faculties and student bodies.

Rationale: Louisiana has come remarkably far in the last two decades in integrating its faculties and student bodies and should continue its efforts in this direction. Nationwide, school segregation has fallen markedly since 1968, but 33 percent of black students still attended virtually all-black schools in 1980. Our data indicate that only 23 percent of the total population of black students in Louisiana still attend virtually all-black schools. These virtually all-black schools constitute only 11 percent of the total number of schools in Louisiana. The researchers believe that the melting pot philosophy that has characterized American education, and indeed American democracy, will produce more effective schools.

C. State Level Recommendations

Recommendation 10: Many voices in the education community are speaking on alternative methods for spending education dollars. School effectiveness research, such as the LSES, can provide evidence for more appropriate ways of spending these state funds. Schools should be rewarded for the following: (a) increases in Average Daily Attendance, (b) student achievement beyond expectation based on student SES, and (c) increases in parental/community involvement.

Rationale: The LSES data indicated that Average Daily Attendance (ADA) predicted achievement independent of SES. Children who aren't in school cannot be expected to learn. Therefore, some system for rewarding schools in which ADA increases should be instituted.

Documented achievement above expectation should be rewarded. Wilbur Brookover has stated (AERA annual meeting in New Orleans, 1984) that rewarding schools for excellence is as important as rewarding teachers for excellence. One of the basic premises of school effectiveness research is that each school has a particular educational climate that fosters or does not foster learning. The LSES data confirm this premise. The effective schools should be rewarded.

The rationale for rewarding schools with increases in parental/community involvement can be found in Recommendation 2 above.

Recommendation 11: More teacher's aides should be employed, especially at the early elementary levels and in schools in which the students come from low SES backgrounds.

Rationale: The effective, low SES schools had more teacher's aides than any of the other groups of schools. Having teacher's aides in the early grades in low SES schools appears to make these schools more effective in educating their students.

Recommendation 12: Local school systems, schools, principals, and faculties should be provided information on student achievement (Louisiana Basic Skills Tests and State Assessment Tests) at the school level, accompanied by a range of predicted scores for the school based on student SES. This will enable the systems, schools, and faculties to know if they have an effective school on this criterion.

Rationale: In the LSES teachers and principals in effective, low SES schools didn't report any understanding of how well they were doing. In fact, many seemed discouraged. The ranges of predicted scores accompanied by actual scores would provide documentation of these faculty members' success.

Recommendation 13: The State Department of Education, in conjunction with local systems, should institute an Effective School Recognition Program.

Rationale: The state gathers a lot of achievement and other data on schools which, in conjunction with local input, could be used to celebrate excellence in Louisiana public education. Credit ought to be given where credit is long overdue.

Recommendation 14: The LDE should encourage teachers to participate in workshops and in-service training concerning effective school climate. The LDE should develop materials for these workshops.

Rationale: One of the strongest findings of the LSES is that school climate has a great effect on student achievement that is independent of the students' socioeconomic background. Important aspects of this school climate include the expectations that teachers hold for their students, and the amount of emphasis placed on academics in the school. Teachers should have the opportunity to explore these and learn ways to apply the ideas in their classrooms.

III. The LSES Plan for Future Action

This report is the culmination of LSES Phase Two. The study has evolved from a single parish exploratory effort to a major school effectiveness study which is drawing favorable national attention to Louisiana. Begun originally as an in-house project, the study is now receiving funding from outside of the State.

During the 1984-85 school year, the LSES researchers will examine in greater detail the day-to-day workings of a relatively small number of schools in an effort to build a more detailed, more qualitative model of the actions necessary to create and maintain schools in which students achieve exceptionally.

Beginning in the 1985-86 school year, the research team intends to assist a small number of local schools in building a base for sustained school improvement. Assuming the success of that endeavor, the State Department will, for the first time, be able to provide Louisiana school systems with a locally validated, research-based program for systematic school improvement.

The ultimate goal of the LSES is to institute a comprehensive school improvement program in Louisiana, following the lead of similar programs in California, Colorado, Connecticut, Delaware, Florida, Maryland, Missouri, and Pennsylvania. In discussing these school improvement programs, Mitchell and Encarnation (1984) concluded that there are three overlapping educational policy goals--efficiency, equity, and quality-- which are noted in Figure VII.1. The LSES program currently focuses on school effectiveness, which is primarily concerned with the efficiency and quality of schooling.

Table VII.1 summarizes LSES past, present, and future activities.

Figure VII.1

Three Overlapping Educational Policy Goals

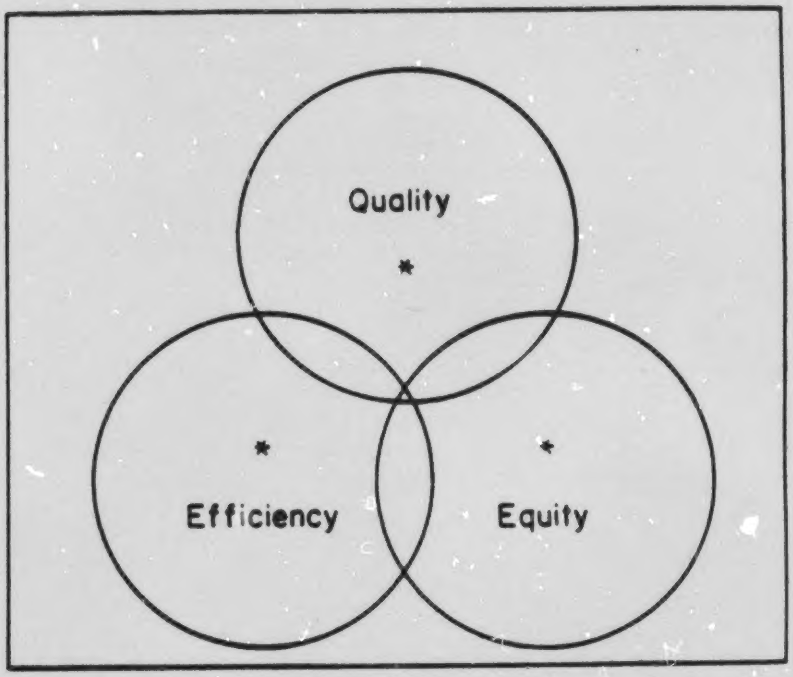
Quality
*
*
Efficiency
*
Equity

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Table VII.1

LSES Past, Present, and Future Activities

Phase	Brief Description	Period
Phase One	Conceptualization of Project Overall design Initiation of project Pilot Study Field tested instrument *Phase One Report* prepared	1980-82
Phase Two	Selected sample of 76 schools Administered school climate questionnaires to 74 principals, 250 teachers, 5,400 students Analyzed data *Phase Two Report* completed June 1984	1982-84
Phase Three	Compare 8 to 10 matched pairs of schools Derive policy implications for what makes an effective school in Louisiana	1984-85
Phase Four	Change 3 or 4 ineffective schools	1985-86
Future Phases	One strategy would be to institute an Effective Schools Recognition Program Another strategy would be to conduct workshops and in-service training statewide concerning effective school climate The ultimate goal would be the institution of a comprehensive school improvement program in Louisiana	1987 →

APPENDIX 1

Appendix 1

A. DATA ELEMENTS - 270 SCHOOLS
(may be aggregated at school or class level)

I. Socioeconomic Characteristics of Students (3rd grade data only)
   - a. Mother's education
   - b. Father's education
   - c. Number of siblings
   - d. Race
   - e. Mother's occupation (may be converted into percent professional)
   - f. Father's occupation (may be converted into percent professional)

II. Faculty Characteristics (may be whole school or 3rd grade only)
   - a. Race composition
   - b. Sex composition
   - c. NTE commons score
   - d. NTE area score
   - e. Highest degree attained
   - f. Absences
   - g. Total experience
   - h. Experience in school presently teaching
   - i. University teacher attended - terminal degree
   - j. Salary of teacher

III. Principal Characteristics (may be whole school or 3rd grade only)
   - a. NTE Administrator Score
   - b. NTE Commons Score
   - c. Race
   - d. University principal attended - terminal degree
   - e. Administrator interview rating (Caddo only)

IV. Other School Ratings (may be whole school or 3rd grade only)
   - a. Student-teacher ratio

V. Other Student Characteristics
   - a. Total count in school
   - b. Total count in 3rd grade
   - c. Sex composition in 3rd grade

VI. Criterion Referenced Tests (third grade only)
   - a. Language arts score
   - b. Mathematics score

B. ADDITIONAL DATA ELEMENTS - 76 SCHOOLS
(may be aggregated at school or class level)

I. Student School Climate Questionnaire (3rd grade only)
  a. Expectation items
    1. Student present expectations
    2. Student future expectations
    3. Parents' expectations
    4. Teachers' expectations
  b. Classroom structure items
  c. Perception of others and of school
  d. Locus of control
  e. Self concept
  f. Demographics (age, sex)

II. Teacher School Climate Questionnaire (3rd grade only)
  a. Parallel questions to student questionnaire
  b. Additional demographic questions: parents education and occupation
  c. Questions related to daily activities in school

III. Principal School Climate Questionnaire (3rd grade only)
  a. Parallel questions to student questionnaire
  b. Questions related to daily activities in school

IV. Norm Referenced Tests (Education Development Series)
  a. Verbal subtest
  b. Reading subtest
  c. English subtest
  d. Mathematics subtest
  e. Total

206

APPENDIX 2

LOUISIANA SCHOOL EFFECTIVENESS STUDY

Sample Design

David L. Bayless
Senior Statistical Scientist

April 1983

Project Report Submitted to Louisiana Department of Education
Office of Research and Development

RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

Project Report

LOUISIANA SCHOOL EFFECTIVENESS STUDY SAMPLE DESIGN

1. Introduction

The purpose of the Louisiana School Effectiveness Study is to identify those factors that make some Louisiana schools more effective than others in educating students. The study is a five-year exploratory effort on the part of the Louisiana Department of Education (LDE) Office of Research and Development (ORD), to analyze school effectiveness in Louisiana. The purpose of this report is to document the sample design used for the 1982-83 Louisiana School Effectiveness Study.

The 1982-83 study will be an assessment of 76 public schools[1/] randomly selected from the 270 schools with third graders of the 12-parish study population in the State. It is further understood and assumed for statistical inference purposes, that the 270 schools with third graders from the study population do not represent a scientifically selected sample of the 795 schools with third graders of the statewide population. A statistical analysis is provided in Appendix A of this report that analyzes the degree of representation of the study population to the statewide population.

The 12 parishes selected for the study were identified by the staff of the Office of Research and Development (ORD) of the Louisiana Department of Education. The major criterion used by ORD staff in selecting the study parishes was that they should represent the

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[1/] Throughout this report when the word school is used, it will refer to the public schools of the State of Louisiana.

geographical regions of the State and have certain secondary sources of data available for analysis; in particular, historical data on the National Teachers Examination.

The major purpose of the sample is to provide a representative sample of schools with third graders from the study population of 12 parishes. In planning the specification of the sample design, it has been decided that the sample of third grade schools should be represented in all of the study parishes and the school achievement levels within these parishes should be proportionally represented. Since all students will be tested in the selected sample schools, the school will be the unit of sampling and analysis in the study.

It was decided at the planning phase of the sample design that size of school (number of third graders per school) would NOT be controlled through stratification in selecting the sample of schools. The advantages and disadvantages of the use of "oversampling" or a disproportionate allocation of the sample of schools to the extremes of the achievement distribution was also discussed in planning the sample. Such a design feature is indeed appealing for studies whose primary objective is to estimate school effects. It was decided not to implement "oversampling" for this year's study because it would make the sample disproportionate of the achievement levels within each of the study parishes. It is suggested that the data of this year study be analyzed for the effectiveness of including "oversampling" in future school effects studies in Louisiana.

This report will first describe the sampling frame used to select the sample of schools, next the sample design developed to sample the schools from the sample frame will be described which will include the stratification and randomization methods used to allocate the sample of schools to the strata of the sample frame and randomly select the schools for the sample. A list of the sample schools is provided next. The next section discusses the analysis methodology needed to analyze the study data per the sample design. In a final section, the results of a comprehensive analysis of the characteristics of the sample are provided comparing the randomly selected sample of 76 schools to the schools of the study population and to the schools with third graders of the statewide population.

2. The Sampling Frame

The sampling frame for the study, which is a list of all schools eligible for random selection into the sample, was constructed by the Louisiana Department of Education and consisted of 270 public schools with third graders in the 12 parishes of Bossier, Caddo, East Baton Rouge, Jefferson, Lincoln, Morehouse, Ouachita, Rapides, St. Martin, Tangipahoa, Vermilion, and Monroe. The source of data for the sampling frame was the 1981-82 school year file of schools of the Louisiana Department of Education and the demographic and achievement data of the 1981-82 Louisiana Second Grade Basic Skills assessment. In constructing the frame, it was found that 4 schools did not have third graders in the school year 1981-82 but did in school year 1982-83 (new schools or schools that added the third grade). These schools were added to the sampling frame. A total of 19 schools that had third graders in 1981-82 but did not have third graders in 1982-83 were deleted from the sampling frame. The variables associated with each school record of the sampling frame were as follows:

1. the six-digit Louisiana Department of Education school code;
2. the school name;
3. average mother's education level[2];
4. average language arts score[3]; and
5. number of third graders in the school.

The sampling frame was then ordered by parish, mother's education level and language arts score, for purposes of stratifying the sample. The working copy of the sampling frame used for the project is available at RTI.

3. The Sample Design

The budget available for the data collection and analyses phases of the study determined the number of schools that would be in the sample. Based on this analysis, it was decided that 75 schools would be included in study sample. It is anticipated that the proposed sample size will meet most of the analytical needs to achieve the study objectives.

It was decided that all 12 parishes of the study population, as was previously mentioned, should be represented in the final sample.

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[2] Average mother's education level was computed based on the data collected in 1981-1982 second grade Louisiana Basic Skills Assessment and is the average of mother education level of the third graders in each school based on the scale of "1" for completed less than 8 years of schooling, "2" for completed 8 years of schooling, but did not attend high school, "3" for attending high school, but did not graduate, "4" for graduated from high school and "5" for attended college. For those schools that were not in the 1981-82 Louisiana Basic Skills Assessment, the average mother's education level of its substratum was imputed and used in the stratification process.

[3] The average language arts score is based on the average raw score of the second grader of the school that took the Louisiana Arts Basic Skills Test in school year 1981-82. For those schools that were not in the 1981-82 Louisiana Basic Skills Assessment the average language arts score its substratum was imputed and used in the stratification process.

Table 1 provides an allocation of the sample of 75 schools to the 12 parishes. Since the school is the unit of analysis, the allocation of the sample was based upon the number of schools in each of the parishes. The last column of Table 1 provides the allocation of the schools. As a condition of participation of St. Martin parish, two schools were included to the sample with certainty. These two schools were selected with certainty having a school sample weight of one and a third sample school was selected at random from the remaining schools of the St. Martin parish stratum. This artifact can be statistically accounted for in the analysis use of the school sample weights (see section 6). Thus, the final sample size was 76 schools out of the 270 schools of the study population. The parish's sample sizes ranged from 17 schools in East Baton Rouge parish to two schools in Lincoln parish (see the last column of Table 1). These sample sizes will be used to determine the number of substrata for each parish. The stratification of the sampling frame is described in the next section.

4. Stratification of the Sampling Frame

The objective of stratification in this sample design is to construct subgroups of schools in which the schools of each subgroup are alike in terms of educational achievement and, at the same time, guarantee that a near proportionate number of schools are selected for the sample from each parish. To achieve this objective, three variables were used to stratify the school sampling frame: the parish of the school, the average mother's educational level of each school, and the average language arts score of each school.

Each of the 12 parishes of the study population served as the first or primary stratification variable which is described in the above

Table 1. The Louisiana School Effectiveness Study (LSES) Sample Design

Study Parishes	Number of Schools With 3rd Grade[1]	Allocation of Sample of n=75 to Parishes	Final Allocation of Sample of n=75 to Parishes
1. Bossier (08)[2]	13	3.61[3]	4
2. Caddo (09)	42	11.67	12
3. E. Baton Rouge (17)	62	17.22	17
4. Jefferson (26)	46	12.79	13
5. Lincoln (31)	6	1.67	2
6. Morehouse (34)	12	3.33	3
7. Ouachato (37)	20	5.55	6
8. Rapides (40)	26	7.22	7
9. St. Martin (50)	6	1.67	2+1[4]
10. Tangipahoa (53)	14	3.89	3
11. Vermilion (57)	12	3.33	3
12. Monroe (65)	11	3.11	3
Study Population	270	75.06	76

[1] For school year 1982-83.

[2] Louisiana Department of Education parish code.

[3] 3.61 = 12 x 75/270 = 12 x .2778.

[4] An additional sample school was added to St. Martin parish at the request of the study director.

section. Stratification within each parish consisted of first stratifying the schools into secondary substrata by use of mother's educational level and within each of these strata, for the larger parishes, the schools were further grouped by the language arts score. It was decided that the sampling frame would be "deeply stratified" to the point that either two or three schools would be randomly selected from each substratum. At least two sample schools are required from each substratum for purposes of estimating sampling error in the analysis.

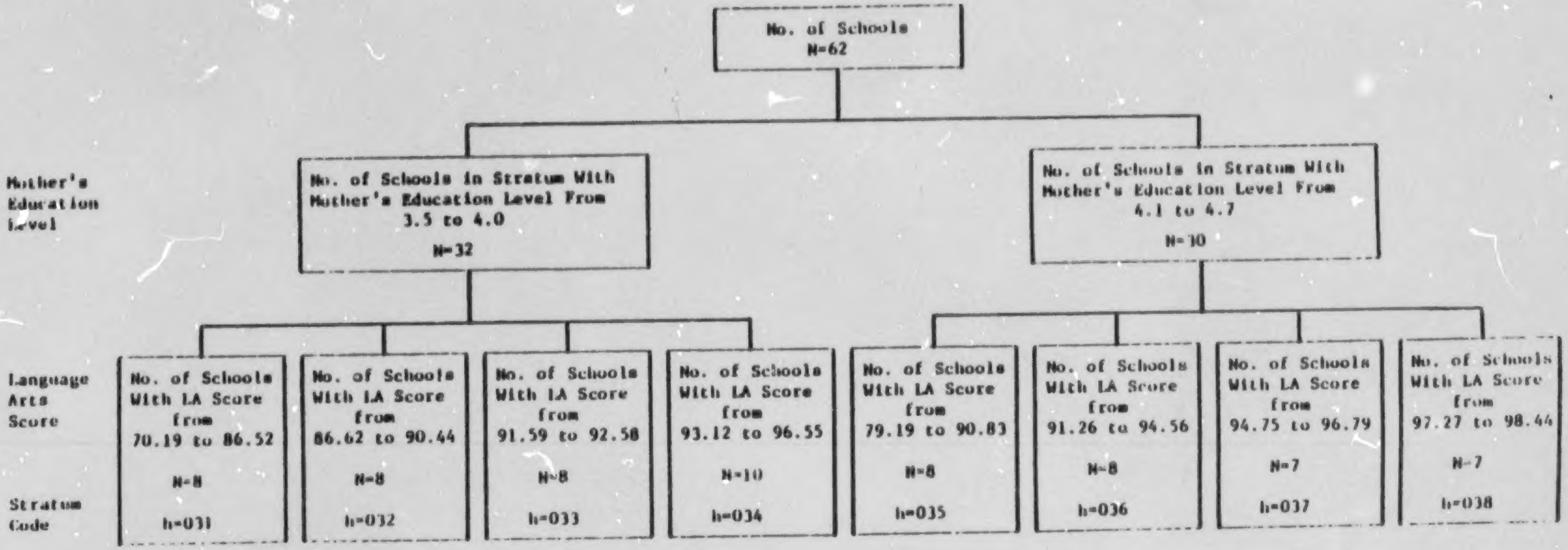
The major criteria for deciding on the number of substrata for a "deeply stratified" design is based upon the number of sample schools allocated to each parish divided by two or three.

Figure 1 provides an illustration of the stratification process for the East Baton Rouge parish. East Baton Rouge parish has a total of 62 schools with third graders. The number of substrata is 8, which is the number of sample schools, 17, divided by 2. These schools were first classified into two substrata based upon mother's educational level. The 32 schools whose mother's education level was from 3.5 to 4.0 formed the first stratum and a second stratum was constructed consisting of the 30 schools whose mother's education level was from 4.1 to 4.7. Within These two strata, four substrata were constructed using the average language arts score, four substrata for the stratum of schools of the lower mother's educational level and four substrata for the stratum of higher mother's education level. The schools that were classified in each of the substrata were decided by rank ordering the schools by the language arts score within each of the mother's education level strata and then grouping the schools in substrata of near equal number of

Figure 1.

Stratification Level: Stratification Level for the Louisiana School Effectiveness Study Sample Design

Parrish: East Baton Rouge Parrish


No. of Schools
N=62
Mother's Education Level
No. of Schools in Stratum With Mother's Education Level From 3.5 to 4.0
N=32
No. of Schools in Stratum With Mother's Education Level From 4.1 to 4.7
N=30
Language Arts Score
Stratum Code
No. of Schools With LA Score from 70.19 to 86.52
N=8
h=031
No. of Schools With LA Score from 86.62 to 90.44
N=8
h=032
No. of Schools With LA Score from 91.59 to 92.58
N=8
h=033
No. of Schools With LA Score from 93.12 to 96.55
N=10
h=034
No. of Schools With LA Score from 79.19 to 90.83
N=8
h=035
No. of Schools With LA Score from 91.26 to 94.56
N=8
h=036
No. of Schools With LA Score from 94.75 to 96.79
N=7
h=037
No. of Schools With LA Score from 97.27 to 98.44
N=7
h=038

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schools so that a sample of two schools could be randomly selected from each substratum. For example, the first substratum (code 031) had schools with language arts scores in the range from 79.19 to 86.52, consisting of a total of 8 schools and the eight substratum (substratum code 038) schools whose language arts scores were from 97.21 to 98.44 consisting of 7 schools.

Table 2 provides a detailed breakdown of the 35 substrata of the sample design. The substrata were constructed using a process similar to that as illustrated by East Baton Rouge parish. Table 2 provides the range of mother's educational level for each substratum, the range of language arts scores within each mother's education substratum, the number of schools in the substratum, and the number of schools in sample. In addition, Table 2 contains the random numbers used to identify the sample schools within each substratum. Thus, the complete sample design is described by the information provided in Table 2. In addition, Table 2 contains the school sample weight (SSW) which is the ratio of number of schools in each substratum divided by the number of sample schools selected from the substratum. Notice that the sample school weights vary from a value 1 in strata 091 and 092 to a value of 4.67 in substratum 101. Use of the sample weights will be illustrated in the analysis section of this report.

5. The Sample of Schools

Table 3 provides a listing of the actual sample schools selected using the sample design described above. Table 3 consists of the six-digit Louisiana Department of Education school building code, parish name, school name, the sample design substratum code, sample design school code, stratum size, characteristics of the school, (namely

Table 2. Louisiana School Effectiveness Study (LSES) Sample Design
Stratification, Sample Selection and Weighting Parameters of the Sample Design

Parish Name	Parish Code	Stratum Code (_)	Range of Mother's Education Level	Range of Language Arts Score	No. of Schools in Stratum (Na)	No. of Schools in Sample (Na)	Range of Random Nos. Used	Actual Random Nos. Selected	School Sample Weights (Wn)
Bossier	08	011	3.5 to 4.1	88.27 to 94.78	6	2	1 to 6	5, 1	3.00
"	08	012	4.2 to 4.7	90.24 to 98.57	7	2	1 to 7	1, 2	3.50
Caddo	09	021	3.4 to 3.9	87.55 to 94.73	7	2	1 to 7	5, 2	3.50
"	09	022	3.4 to 3.9	94.75 to 96.02	9	2	7 to 16	15,11	4.50
"	09	023	3.4 to 3.9	96.94 to 98.75	7	2	17 to 23	17, 18	3.50
"	09	024	4.0 to 4.7	91.70 to 95.79	6	2	1 to 6	3, 5	3.00
"	09	025	4.0 to 4.7	96.23 to 98.02	6	2	7 to 12	7, 11	3.00
"	09	026	4.0 to 4.7	98.07 to 99.14	6	2	13 to 18	13, 17	3.00
E. Baton Rouge	17	031	3.5 to 3.9	79.19 to 86.52	8	3	1 to 8	8, 7, 3	2.67
" " "	17	032	3.5 to 3.9	86.62 to 90.44	8	2	9 to 16	9, 10	4.00
" " "	17	033	3.5 to 3.9	91.59 to 92.58	8	2	17 to 24	17, 23	4.00
" " "	17	034	3.5 to 3.9	93.12 to 96.55	8	2	25 to 32	30, 26	4.00
" " "	17	035	4.1 to 4.7	79.19 to 90.83	8	2	1 to 8	6, 7	4.00
" " "	17	036	4.1 to 4.7	91.26 to 94.56	8	2	9 to 16	14, 16	4.00
" " "	17	037	4.1 to 4.7	94.75 to 96.79	7	2	17 to 23	19, 21	3.50
" " "	17	038	4.1 to 4.7	97.27 to 98.44	7	2	24 to 30	27, 28	3.50
Jefferson	34	041	2.9 to 3.8	87.01 to 89.88	7	3	1 to 7	7, 1, 4	2.33
"	34	042	2.9 to 3.8	90.00 to 92.78	8	2	8 to 15	9, 15	4.00
"	34	043	2.9 to 3.8	92.83 to 96.55	8	2	16 to 23	18, 21	4.00
"	34	044	3.9 to 4.5	89.54 to 93.35	8	2	1 to 8	5, 4	4.00
"	34	045	3.9 to 4.5	93.77 to 95.86	8	2	9 to 16	11, 14	4.00
"	34	046	3.9 to 4.5	95.95 to 96.81	7	2	17 to 23	19, 22	3.50
Lincoln	31	051	3.8 to 4.7	94.52 to 98.38	6	2	1 to 6	2, 5	3.00
Morehouse	34	061	2.5 to 4.1	90.19 to 97.32	12	3	1 to 12	9, 4, 8	3.00

Table 2 (Cont'd). Louisiana School Effectiveness Study (LSES)
Stratification, Sample Selection and Weighting Parameters of the Sample Design

Parish Name	Parish Code	Stratum Code (_)	Range of Mother's Education Level	Range of Language Arts Score	No. of Schools in Stratum (Na)	No. of Schools in Sample (Na)	Range of Random Nos. Used	Actual Random Nos. Selected	School Sample Weights (Wn)
Ouachito	37	071	3.3 to 4.0	91.45 to 97.96	10	3	1 to 10	5, 2, 10	3.33
"	37	072	4.1 to 4.6	91.80 to 98.74	10	3	1 to 10	10, 5, 3	3.33
Rapides	40	081	3.3 to 3.6	86.25 to 97.03	9	3	1 to 9	1, 3, 4	3.33
"	40	082	3.7 to 3.9	88.33 to 98.46	8	2	1 to 8	4, 3	4.00
"	40	083	4.0 to 4.3	93.39 to 97.61	9	2	1 to 9	9, 5	4.50
St. Martin	50	091	3.3	95.00	1	1	1	1	1.00*
" "	50	092	3.5	89.51	1	1	1	1	1.00*
" "	50	093	2.3 to 3.8	90.00 to 96.23	4	1	1 to 4	1	4.00
Tangipahoa	53	101	3.3 to 4.0	85.45 to 95.11	14	3	1 to 14	7, 8, 2	4.67
Vermilion	57	111	3.5 to 4.1	91.35 to 98.41	12	3	1 to 12	2, 6, 11	4.00
Monroe	65	121	3.3 to 4.4	89.86 to 97.20	11	3	1 to 11	11, 7, 4	3.33

Table 3. Louisiana School Effectiveness Study Sample Design
List of Sample Schools Selected and Their Selected Characteristics

	School Code	Parish	School Name	Sample Design School Code (h)	Mother's Education Level	Language Arts Score	No. of 3r Graders M_h
1.	08024	Bossier	Platt	0111	4.1	94.16	217
2.	08200	"	Plain Dealing	0112	3.5	88.27	49
3.	08050	"	Benton	0121	4.2	90.24	84
4.	08030	"	Bellaire	0122	4.7	96.42	106
5.	09480	Caddo	Pierre Avenue	0211	3.5	89.68	43
6.	09490	"	Pine Grove	0212	3.8	93.86	73
7.	09005	"	Bethune	0221	3.9	95.64	138
8.	09560	"	Newton Smith	0222	3.9	96.01	99
9.	09610	"	Stoner Hill	0231	3.7	96.94	53
10.	09470	"	Oil City Junior	0232	3.5	96.96	25
11.	09040	"	Barret	0241	4.0	94.95	31
12.	09580	"	Southern Hill	0242	4.1	95.51	92
13.	09270	"	Hillsdale	0251	4.0	96.23	77
14.	09230	"	Forrest Hill	0252	4.3	97.94	94
15.	09660	"	University	0261	4.4	98.07	97
16.	09320	"	Judson	0262	4.3	98.80	72
17.	17225	East Baton Rouge	Harding	0311	3.8	86.52	44
18.	17090	" " "	Brookstown	0312	3.8	84.94	79
19.	17350	" " "	Park	0313	3.9	81.22	94
20.	17160	" " "	Dalton	0321	3.9	86.62	57
21.	17165	" " "	Delmont	0322	3.6	87.35	49
22.	17325	" " "	North Highlands	0331	3.7	91.59	44
23.	17015	" " "	Audubon	0332	3.5	92.42	55
24.	17200	" " "	Glen Oaks Park	0341	3.9	94.63	50
25.	17035	" " "	Bakerfield	0342	4.0	93.16	98
26.	17460	" " "	South Boulevard	0351	4.4	90.04	44
27.	17190	" " "	Forest Heights	0352	4.1	90.32	47
28.	17440	" " "	Sharron Hills	0361	4.1	93.79	81
29.	17285	" " "	Magnolia Woods	0362	4.6	94.56	49
30.	17515	" " "	Walnut Hills	0371	4.4	95.48	[illegible]
31.	17545	" " "	Wildwood	0372	4.6	96.12	54
32.	17255	" " "	Jefferson Terrace	0381	4.3	97.87	[illegible]
33.	17100	" " "	Buchanan	0382	4.4	97.90	35
34.	26580	Jefferson	Live Oak	0411	3.5	87.01	78
35.	26360	"	Gretna Park	0412	3.6	89.88	130
36.	26120	"	Bridge City	0413	3.4	89.01	90
37.	26040	"	Ames	0421	3.5	90.00	64
38.	26740	"	Lilly W. Ruppel	0422	3.6	92.78	158
39.	26460	"	Homedale	0431	3.1	93.13	51
40.	26680	"	Ella C. Pittman	0432	3.4	93.88	97
41.	26770	"	Terrytown	0441	4.1	91.48	91
42.	26170	"	George Cox	0442	3.9	91.23	118
43.	26080	"	Alice Birney	0452	4.3	95.43	70
44.	26820	"	Westgate	0451	3.9	94.07	143
45.	26090	"	Bissonet Plaza	0461	4.3	96.46	39
46.	26260	"	J. C. Ellis	0462	4.2	96.78	57
47.	31240	Lincoln	Ruston	0511	3.9	95.89	92
48.	31140	"	Hico	0512	3.9	96.29	40
49.	34240	Morehouse	East Side	0611	3.4	96.37	51
50.	34300	"	Oak Hill	0612	3.6	91.99	82
51.	34340	"	Pine Grove	0613	3.4	95.55	[illegible]
52.	37060	Ouachita	Central	0711	4.0	95.77	75
53.	37100	"	Crosley	0712	3.8	92.18	29
54.	37500	"	Riser	0713	3.9	97.96	54
55.	37220	"	Lakeshore	0721	4.3	98.74	33
56.	37180	"	Highland	0722	4.2	97.67	60
57.	37120	"	Drew	0723	4.2	96.62	68

Table 3 (Cont'd). Louisiana School Effectiveness Study Sample Design List of Sample Schools Selected and Their Selected Characteristics

School Code	Parish	School Name	Sample Design School Code (h)	Mother's Education Level	Language Arts Score	No. of 3rd Graders M_h
58. 40315	Rapides	Lecompte	0811	3.5	86.25	60
59. 40105	"	Boyce	0812	3.5	91.96	64
60. 40405	"	North Bayou Rapides	0813	3.4	93.88	46
61. 40240	"	Mary Goff	0821	3.9	95.16	94
62. 40420	"	Oak Hill	0822	3.8	94.34	78
63. 40180	"	Cherokee	0831	4.2	97.55	32
64. 40480	"	Pineville	0832	4.1	95.24	57
65. 50300	St. Martin	St. Martinville	0911	3.3	95.00	193
66. 50060	" "	Breaux Bridge	0912	3.5	89.51	151
67. 50200	" "	Parks	0212	3.8	90.00	53
68. 53080	Tangipahoa	Champ Cooper	1011	4.0	90.54	47
69. 53005	"	Crystal Street	1012	3.6	90.49	61
70. 53380	"	Mooney	1013	3.4	85.80	132
71. 57260	Vermilion	Kaplan	1111	3.6	91.67	101
72. 57380	"	Indian Bayou	1112	3.8	97.11	19
73. 57340	"	Meaux	1113	3.8	97.11	19
74. 65320	Monroe	Sherrouse	1211	4.1	97.20	62
75. 65240	"	Lexington	1212	4.3	96.15	104
76. 65200	"	Berg Jones	1213	3.3	94.10	118

mother's education level, language arts score and the number of third graders in the sample schools). This list of schools was used by the LDE Office of Research and Development staff to conduct the data collection phase of the study.

6. Analysis Methodology

Although the sample design for the study was planned to be "proportional" or self-representing across the population of schools, as is the case with most sample surveys the actual sample of schools possesses a slight degree of "disproportionateness." This characteristic of the sample is dealt with in the analysis through a technique known as "weighting." The last column of Tables 2 gives the school sample weights (SSW) for each of the substrata for the sample design that was actually implemented. By definition, the school sample weight is dependent upon the substratification methods used and it is defined as the ratio of the number of schools in the substratum divided by the number of schools randomly selected from the substratum. The commonly used symbols for the number of schools in the substratum is N_h, and the number of sample schools selected from the substratum is n_h. Thus, the formula to compute the school sample weight SSW is

$$SSW = N_h/n_h .$$

These are the values computed in the last column of Table 2. An interpretation of the school sample weight value is that it is a "representation factor" of the sample schools. The SSW can be compared to a "standard" which to is the ratio of the number of schools in the study population of N = 270 schools to the total number of sample schools n = 76 which equals 3.55. The interpretation of this standard, is that each school in the sample represents 3.55 schools in the population.

The appropriate sample estimate, $\hat{\bar{Y}}$ weighted, using the school sample weights per the sample design, to estimate of the population average is given by the formula

$$\hat{\bar{Y}}_{weighted} = \frac{\sum_{h=1}^{L=35} W_h \sum_{i=1}^{n_h} y_{hi}}{\sum_{h=1}^{L=35} W_h} = \frac{\Sigma N_h \bar{y}_h}{\Sigma W_h}$$

Where L = 35 is the number of substrata and y_{hi} is the value of the variable under study for the ith school of the hth stratum. Letting y_{hi} be the value of mother's education level or language arts score for the ith sample school of the hth substratum, and $\bar{Y}$ be the average mother's education level as average language arts score for the hth stratum, weighted estimates are computed for each of the parishes and the study population in Tables 4 and 5.

7. Analysis of the Actual Sample Selected

A special attribute of the sampling frame for this study is that variables are recorded which permit comparative analysis of the sample school selected to the study population as well as the total statewide population of third grade schools in the State of Louisiana. Table 4 is a comparison of the statewide and study population to the randomly selected schools of the LSES sample design. In comparing the unweighted and weighted averages for mother's educational level and the language

Table 4. Louisiana School Effectiveness Study
Sample Design Comparison of Statewide and Study Population to
Randomly Selected Schools of the LSES Sample Selected Characteristics

Selected Characteristics	Statewide Population	Study Population	Randomly Selected Sample of Schools	
No. of Schools with 3rd Grade	795	270	76	
			Unweighted	Weighted
Average 3rd Grader Per School	66.3	68.3	76.3	
Average Mother's Education Level	3.7	3.9	3.9	3.9
Average Language Arts Score	93.10	93.69	93.41	93.15

arts score for the sample and the study population, we observe they are nearly identical. In addition, the agreement between the characteristics of the study population and the statewide population is good. An exception is the average number of third graders per school in the sample differs somewhat from the study population. This is explained by the fact that no control (stratification variable) was incorporated into the sample design to guarantee a spread of the sample across school size. However, given that all students in each sample school are going to be assessed that and the school sample weights will be used in the analysis of the study data, this difference is not of concern from a statistical viewpoint.

As a further analysis of the comparison of the study population to the sample, Table 5 provides a comparison of the unweighted and weighted average mother's educational level and the language arts score for the for the sample and the study population for each of the 12 parishes. For most of the parishes the weighted sample estimates nearly match the population values of the study population. The exception being St. Martin parish. The unweighted and weighted sample estimates are in near agreement indicating the use of school sample weight to compute descriptive statistics is not that critical.

Table 5. The Louisiana School Effectiveness Study (LSES) Sample Design Comparison of Average Mother's Education Level and Language Arts Score for the Study Population and Randomly Selected Schools of the LSES Sample by Parishes of Study Population

	Average Mother's Education Level			Average Language Arts Score		
Study Population Parishes	Population Values	Estimates Unweighted	Weighted	Population Values	Estimates Unweighted	Weighted
1. Bossier	4.2	4.1	4.2	94.32	92.26	92.36
2. Caddo	3.9	4.0	3.9	96.00	95.88	95.83
3. East Baton Rouge	4.1	4.1	4.1	91.45	91.44	91.57
4. Jefferson	3.8	3.8	3.8	92.81	92.39	92.71
5. Lincoln	4.1	3.9	3.9	96.24	96.09	96.09
6. Morehouse	3.4	3.5	3.5	94.25	94.77	94.77
7. Ouachita	4.0	4.0	4.1	96.21	96.49	96.49
8. Rapides	3.8	3.8	3.8	94.54	93.48	93.92
9. St. Martin	3.3	3.6	3.7	92.92	91.50	90.75
10. Tangipahoa	3.6	3.7	3.7	90.18	88.94	88.94
11. Vermilion	3.8	3.9	3.8	95.52	95.05	95.06
12. Monroe	3.9	3.9	3.9	94.66	95.82	95.82
Study Population	3.9	3.9	3.9	93.69	93.41	93.15

APPENDIX 3

Comparison of Scores on the Louisiana Basic Skills Tests (BSTs) and the Educational Developmental Series Lower Primary Test (EDS).

A. Introduction

In the pilot year of the LSES, the dependent variables used in the data analyses were scores from criterion-referenced tests. While such test data were again available for the first phase of the study (1982-83 school year), the investigators decided to also administer a norm-referenced test to the third-graders in the study sample of 76 schools. These additional test scores allowed the execution of the more statistically sophisticated analyses to be presented in Chapters Five and Six.

Comparison between scores on the Louisiana Basic Skills Tests (BST) and the Educational Developmental Series Lower Primary Level Test (EDS) were available for approximately 5,400 students who took the EDS in 1983. The Bureau of Accountability in the Louisiana State Department of Education was interested in comparing the performance of students on the BST and the EDS in order to examine the construct and decision validity of the third grade BST. A full report on this study may be found in Mills, Teddlie, and Falkowski (1984). The remainder of this section is excerpted from that report.

B. Data Collection

Details of the collection of EDS were given previously. The BSTs were administered at the end of March 1983 over a four-day period. A practice test was administered on the first day and an essay test on the fourth day. The language arts and mathematics multiple choice tests that actually contributed to promotion and compensatory education decisions were administered on the second and third days of the four-day period. It is only those two tests that are included in this study. The BSTs were administered by classroom teachers under untimed conditions.

C. Data Analysis Procedures

The BSTs are criterion-referenced measures of minimum skills while the EDS is a more broadly based norm-referenced measure. This major distinction between the tests made it obvious that comparisons between the tests would be complicated. The differences between content specification, item selection, and score distributions are substantial and make comparisons between the tests more difficult than comparisons between two norm-referenced or two criterion-referenced tests of similar content. However, there are also similarities between the content specifications of the tests and, at a broad level, both are measures of language arts and mathematics, so it was deemed appropriate to conduct the study.

The differences between the tests were expected to affect the study in a variety of ways. For example, it was expected that the substantial skew in BST scores and lack of variability (most examinees score quite high on the tests) would act to keep correlations between the measures low. Furthermore, for most BST scores (particularly high ones in which ceiling effects come into play), the range of EDS scores would be substantial. Thus, it was hypothesized that considerable overlap of EDS score ranges would be found for adjacent BST score intervals. While this issue was not enough to invalidate the results of the study, it was clear from the onset of the study that the results would be mixed. Four steps were included in the data analysis.

First, correlations between the BST and EDS were computed at the total test, domain, and objective levels. It is common to use correlation coefficients in validity studies. In general, tests that purport to measure similar skills should correlate more highly with one another than tests that are not designed to measure similar skills. Since both the BSTs and the EDS have been designed as measures of language arts and mathematics and are specified as appropriate for third-grade examinees, there should be a high correlation between the tests. However, as mentioned previously, the correlations were expected to be depressed because of content and statistical differences between the tests.

Second, subgroups were formed on the basis of BST scores, and the average EDS score in each subgroup was computed. The percentile ranks of the average scores were examined. Since a cut-off score has been established on the BSTs, one interesting comparison is the difference between EDS scores of those students who attained the standard on the BST and those who did not. The group of students who did attain the BST standard was further divided into five-point score intervals to examine whether or not there are points on the BST scale that provide better separation of examinees on the EDS test than the current cut-off score. If, for example, the average difference in EDS scores from one interval to the next is five points, but an interval is found in which there is a 10-point interval, further investigation of that difference might be warranted to determine whether a need exists to change the cut-off on the BST.

Third, subgroups were formed based on EDS stanines (see Glossary) within the study sample. Average BST scores were computed within each EDS stanine. This step is, to some extent, the reverse of the previous step. Stanines are conveniant measures for creating score groups on the EDS because they represent a clear normative scale and do not depend on a particular score range. One knows what percent of the examinee group is within each stanine and can interpret BST scores in the context. The interpretation of results in this step could also imply a need to reconsider the placement of the cut-off score on the BST.

Finally, decision agreement (see Glossary) was assessed by setting a cut-off score on the EDS and comparing the decisions with those made on the BST. The EDS cut-off was established by determining the percentile rank of the BST cut-off score in the study population and determining the EDS raw score that had the same percentile rank. This raw score was then taken as the EDS cut-off. Beyond the construct validation that is possible in the first three steps, the decision validity of the BST should be investigated. The major purpose of the BST is to identify students who require remedial instruction. Therefore, the issue of who attains or does not attain the standard is an important one. Regardless of the pattern of correlations between the BST and any norm-referenced test, the tests should identify the same students as in need of additional instruction. The difference between the tests in this context is that the EDS test cannot, after identifying the low students, provide the detailed information regarding specific examinee deficiencies that are available from the BST.

D. Scores

The Louisiana edition of the EDS was composed of four sections: Verbal, Reading, English, and Mathematics. Scores were reported for each of these sections. Scholastic Testing Service (STS) also computed a Basic Skills score by summing the Reading, English, and Mathematics scores. This score (75 items) was equated to the EDS Basic Skills score (150 items) by STS to allow use of their norms tables. Equated scores were used for total test comparisons. Raw scores were used for all domain and objective comparisons.

A Language Arts raw score on the EDS was computed by the researchers by summing the Reading, Verbal, and English scores. Given the content of these sections, it was felt that this score was analogous to the BST Language Arts score.

The BSTs are two tests: Language Arts and Mathematics. Scores for these tests are reported in terms of percent correct. Total test means reported in this paper are percent correct scores. Thus, a score of 89.88 for BST Language Arts (See Table 1) represents 89.88 percent of the 92 items on the test. A BST total score (summing the Language Arts and Mathematics scores) is not reported by the Louisiana State Department of Education, but was computed for this study to create a score analogous to the EDS Basic Skills score.

All tests and test sections were scored using number right scoring. No corrections were made for guessing or omitting items.

Table 1

Correlations Between Louisiana Basic Skills Test and Educational Development Series

Level	Comparison	Louisiana Basic Skills Test			Educational Development Series			Pearson r**
		N(Items)	$\bar{X}$*	S.D.	N(Items)	$\bar{X}$	S.D.	
TEST	BST Total - EDS Equated Basic Skills	192	177.57	21.16	150	98.16	22.92	.632
	BST Language - EDS Verbal	92	89.88	10.95	25	16.67	4.79	.557
	BST Language - EDS Reading	92	89.88	10.95	25	14.42	5.28	.519
	BST Language - EDS English	92	89.88	10.95	25	15.21	4.45	.549
	BST Language - EDS Equated Basic Skills	92	89.88	10.95	150	98.16	22.92	.599
	BST Language - EDS Language	92	89.88	10.95	75	46.02	13.05	.611
	BST Mathematics - EDS Mathematics	90	87.69	11.79	25	19.93	3.78	.563
	BST Mathematics - EDS Equated Basic Skills	100	87.69	11.79	150	98.16	22.92	.578
DOMAINS	BST Vocabulary - EDS Verbal	8	7.42	1.12	25	16.67	4.79	.439
	BST Comprehension - EDS Reading	12	10.89	1.60	25	14.42	5.28	.361
	BST Punctuation - EDS Punctuation	8	6.67	1.62	6	2.87	1.45	.304
	BST Whole Numbers - EDS Whole Numbers	40	35.70	5.20	9	7.23	1.80	.459
	BST Problem Solving - EDS Problem Solving	8	5.71	2.12	4	2.65	1.27	.420
	BST Numeration - EDS Numeration	16	14.26	2.40	5	4.24	.82	.223
OBJECTIVES	BST Alphabetization - EDS Alphabetization	4	3.71	.81	5	4.12	1.20	.182
	BST Capitalization - EDS Capitalization	4	3.69	.77	5	2.85	1.43	.289
	BST Verb Endings - EDS Verb Endings	4	3.36	.93	5	2.69	1.30	.339
	BST Pronouns - EDS Pronouns	4	3.83	.53	3	1.97	.86	.175

* BST language and mathematics means are reported as percents. The BST total is a sum of those percents. All other means are based on raw scores.

** All Pearson r correlations were significant at the $p < .0001$ level.

E. Results

1. Correlational Analyses

The BSTs and the EDS were first compared by computing a series of Pearson r statistics. The results are reported in Table 1. The correlations were based on three levels of comparisons: those between tests, those between domains, and those between objectives. Examination of Table 1 reveals several interesting findings. All of the correlations are significant ($p < .001$). As expected, the higher correlations were found at the more general levels of comparison. Correlation between tests were higher in all cases than domain and objective correlations.

For these comparisons, a test was defined as any separate section or score (EDS verbal-a section, and EDS Basic Skills-a composite, were both included in the test section). The range of correlations is from .519 to .632. The largest value was found for the correlation between the two composite measures: BST total and EDS Basic Skills.

Although the correlations followed the expected pattern (larger for comparisons between longer sets of items), they were lower than the correlations one might expect on the basis of correlations between two norm-referenced measures. While the low correlations could be interpreted to mean that the tests are measuring different things, an equally likely explanation is that they were due, to some extent, to the nature of the score distributions. Means and standard deviations for all item groupings are reported in Table 1. Inspection of these data indicate that ceiling effects were a factor at all levels of the BST.

It seems, therefore, that the lack of variability on the BST at all levels and the lack of variability on the EDS at the domain and objective levels may have acted to lower the correlations. This information, considered with the knowledge of the differences in test content, should be used when interpreting the relationship between the EDS and the BST. On the whole, the patterns of correlations shown in Table 1 seem to indicate that the tests are measuring similar abilities.

2. Analysis of EDS Performance by BST Interval

The second analysis was performed to answer the question "Do groups of students scoring within different ranges on the BST also have distinguishably different mean scores on the EDS?" If a logical progression of EDS scores exists for students in different score groups on the BST, more confidence can be placed in the interpretation that the previously reported low correlations are partly caused by ceiling and floor effects.

Table 2 contains information on the EDS scores of students in different BST score intervals. Students scoring between 75 and 100 percent correct were divided into five equal-interval groups. A sixth group was formed for all students who did not attain the 75 percent cut-off.

Average EDS scores for examinees in each BST interval were computed and national percentiles associated with the average scores were determined. These statistics were generated for the EDS Verbal, Reading, English, and Basic Skills Composite for each BST Language Arts interval. For BST Mathematics intervals, the statistics were computed for EDS Mathematics and Basic Skills composite.

The results in Table 2 are consistent. As the scores increase on the BSTs, average scores on the EDS tests also increase. This progression was noted for every interval on every test.

3. Analysis of BST Performance by EDS Stanines

In this section, an analysis complementary to that in the preceding section is presented. Table 3 presents BST average percent correct scores for students in each EDS local (LSES study) stanine. Average percent correct scores (APCs) were calculated on the BST Language Arts test for students in each stanine of the EDS Verbal, Reading, English, and Basic Skills Composite scores. Mathematics APCs were calculated for students in each of the stanines on the EDS Mathematics and Basic Skills Composite scores.

The pattern of results shown in Table 3 is consistent across EDS stanine groups. As stanines increase, the APCs on the BST also increase. There were no cases in which a BST average score decreased as the stanine increased.

4. Decision Agreement

As a final measure of the validity of the BST, analyses were conducted concerning the extent to which the two tests identify the same examinees as being in need of remediation. While correlations of scores contain useful information concerning the constructs measured on the tests, they are not useful for determining the degree to which students identified for remediation by the BST are the same ones who would have been identified

Table 2

Percent Correct and Percentile Scores on Educational Development Series, Students Classified by State Basic Skills Scores

BST Language Arts Score	Verbal			Reading			English			Basic Skills		
	n	Percent Correct	Percentile	n	Percent Correct	Percentile	n	Percent Correct	Percentile	n	Percent Correct	Percentile
less than 75%	401	42.74	9.7	396	33.52	11.5	399	40.58	8.1	389	45.99	8.1
75.00 to 79.99	252	49.70	18.4	250	40.06	15.9	254	45.32	11.5	246	51.49	13.6
80.00 to 84.99	497	53.74	21.2	487	45.36	24.2	493	49.96	15.9	480	56.09	18.4
85.00 to 89.99	595	58.86	27.4	581	49.72	30.8	592	55.04	27.4	576	60.20	24.2
90.00 to 94.99	1,306	66.60	42.1	1,292	56.70	38.2	1,303	62.00	42.1	1,287	66.14	38.2
95.00 to 100.00	2,014	76.06	61.8	2,011	69.02	57.9	2,009	72.88	65.5	2,002	75.83	61.8

Table 2 - Continued

BST Math Score	Mathematics			EDS Basic Skills		
	n	Percent Correct	Percentile	n	Percent Correct	Percentile
less than 75%	625	62.72	15.9	605	49.53	11.5
75.00 to 79.99	311	69.28	27.4	305	55.81	18.4
80.00 to 84.99	503	72.98	30.8	491	58.39	24.2
85.00 to 89.99	761	77.02	42.1	741	62.83	30.8
90.00 to 94.99	1,159	81.50	50.0	1,146	68.46	42.1
95.00 to 100.00	1,700	86.80	57.9	1,692	75.90	61.8

Table 3

Average Percent Correct on Basic Skills Tests for Students Classified by Local Educational Development Series Stanine

EDS Verbal Stanine	BST APC (Language Arts)	EDS Reading Stanine	BST APC (Language Arts)	EDS English Stanine	BST APC (Language Arts)	EDS Basic Skills Stanine	BST APC (Language Arts)	EDS Math Stanine	BST APC (Math)	EDS Basic Skills Stanine	BST APC (Math)
1	75.02	1	74.36	1	76.16	1	72.00	1	72.60	1	69.51
2	78.63	2	80.23	2	78.74	2	77.51	2	75.30	2	75.86
3	83.88	3	84.40	3	82.93	3	82.26	3	80.22	3	80.45
4	88.17	4	87.36	4	86.54	4	87.69	4	84.78	4	84.78
5	91.90	5	90.71	5	90.82	5	91.56	5	88.90	5	88.82
6	93.88	6	93.37	6	94.14	6	94.39	6	92.36	6	92.19
7	95.82	7	95.49	7	96.09	7	96.53	7	93.85	7	94.85
8	96.80	8	97.48	8	97.32	8	97.62	8	95.59	8	96.36
9	97.68	9	98.11	9	98.07	9	98.38	9	97.02	9	97.70
	(n = 5057)		(n = 5009)		(n = 5042)		(n = 4972)		(n = 5050)		(n = 4971)

by other methods. Therefore, cut-offs were determined on the EDS tests and students were classified into one of four groups based on performance on the two tests (pass both tests, pass BST only, pass EDS only, pass neither test). Cut-offs were established to be of equal percentile rank. These results are presented in Table 4. Decision agreement is more than 90 percent for all language arts comparisons. The math results are lower; however, more than 85 percent of the students would be classified similarly on the tests in mathematics. In all cases, when differences do occur, examinees are slightly more likely to have passed only the EDS test than to have passed only the BST. The results of this analysis indicate that the BST identifies students for remediation in a manner consistent with at least one norm-referenced test.

Table 4

Decision Agreement (Percent) Between EDS Tests and BST Tests

BST Subject	EDS Test	Pass Both	Pass BST Only	Pass EDS Only	Pass Neither
Language Arts	Verbal	88.08	3.94	5.61	2.36
	Reading	88.75	3.27	6.13	1.85
	English	88.32	3.70	6.19	1.79
	Basic Skills	87.47	4.55	4.93	3.05
Mathematics	Mathematics	82.55	5.04	7.96	4.45
	Basic Skills	80.61	6.97	7.15	5.26

APPENDIX 4

STUDENT QUESTIONNAIRE

PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING THE NUMBER ON THE RIGHT OF YOUR BEST ANSWER TO THE QUESTION. PICK ONLY ONE ANSWER FOR EACH QUESTION!

1. How old are you?

7 years old - 1.
8 years old - 2.
9 years old - 3.
10 years old - 4.
11 years old - 5.
12 years old - 6.
13 years old - 7.

2. Are you a boy or girl?

boy - 1.
girl - 2.

3. Including this year, how many years have you been at this school?

Less than 1 year - 1.
2 years - 2.
3 years - 3.
4 years - 4.
5 years - 5.
6 years - 6.
7 years or more - 7.

4. How far do you think you will go in school?

Finish grade school - 1.
Go to high school for a while - 2.
Finish high school - 3.
Go to college for a while - 4.
Finish college - 5.

5. When you finish high school, do you think you will be one of the best students, about the same as most or below most of the students?

One of the best - 1.
Better than most of the students - 2.
Same as most of the students - 3.
Below most of the students - 4.
One of the worst - 5.

6. How far do you think your best friend believes you will go in school?

Finish grade school - 1.
Go to high school for a while - 2.
Finish high school - 3.
Go to college for a while - 4.
Finish college - 5.

7. Do you think you can do school work better, the same or poorer than your friends?

Better than all of them - 1.
Better than most of them - 2.
About the same - 3.
Poorer than most of them - 4.
Poorer than all of them - 5.

8. How far do you think your parents believe you will go in school?

Finish grade school - 1.
Go to high school for a while - 2.
Finish high school - 3.
Go to college for a while - 4.
Finish college - 5.

9. What kind of student do your parents expect you to be in school?

Better than all of them - 1.
Better than most of them - 2.
About the same - 3.
Poorer than most of them - 4.
Poorer than all of them - 5.

10. Do your parents say you can do school work better, the same, or poorer than your friends?

Better than all of them - 1.
Better than most of them - 2.
About the same - 3.
Poorer than most of them - 4.
Poorer than all of them - 5.

11. Do your parents think you could finish college?

Yes, for sure - 1.
Yes, probably - 2.
Maybe - 3.
No, probably not - 4.
No, for sure - 5.

12. What kind of student does your teacher expect you to be in school?

One of the best - 1.
Better than most of the students - 2.
Same as most of the students - 3.
Below most of the students - 4.
One of the worst - 5.

13. Would your teacher say you can do school work better, the same, or poorer than other people your age?

Better than all of them - 1.
Better than most of them - 2.
About the same - 3.
Poorer than most of them - 4.
Poorer than all of them - 5.

14. Does your teacher think you could finish college?

Yes, for sure - 1.
Yes, probably - 2.
Maybe - 3.
No, probably not - 4.
No, for sure - 5.

15. How many teachers in this school tell students to try to get better grades than their classmates?

Almost all of the teachers - 1.
Most of the teachers - 2.
Half of the teachers - 3.
Some of the teachers - 4.
None of the teachers - 5.

16. Of the teachers that you know in this school, how many don't care if the students get bad grades?

Almost all of the teachers - 1.
Most of the teachers - 2.
Half of the teachers - 3.
Some of the teachers - 4.
None of the teachers - 5.

17. Of the teachers that you know in this school, how many tell students to do extra work so that they can get better grades?

Almost all of the teachers - 1.
Most of the teachers - 2.
Half of the teachers - 3.
Some of the teachers - 4.
None of the teachers - 5.

18. How important is it to teachers in this school that their students learn their school work?

It is the most important thing to the teachers - 1.
It is very important to the teachers - 2.
It is somewhat important to the teachers - 3.
It is not very important to the teachers - 4.
It is not important at all to the teachers - 5.

19. Of the teachers that you know in this school, how many don't care how hard the student works, as long as he passes?

Almost all of the teachers - 1.
Most of the teachers - 2.
Half of the teachers - 3.
Some of the teachers - 4.
None of the teachers - 5.

20. How often do teachers in this school try to help students who do badly on their school work?

They always try to help - 1.
They usually try to help - 2.
They sometimes try to help - 3.
They seldom try to help - 4.
They never try to help - 5.

21. When I am working on a lesson, the other students in my class are working on the same lesson.

Always - 1.
Often - 2.
Sometimes - 3.
Seldom - 4.
Never - 5.

22. In class, I have the same seat and I must sit next to the same students.

Always - 1.
Often - 2.
Sometimes - 3.
Seldom - 4.
Never - 5.

23. In class, the teacher stands in front of the room and works with the class as a whole.

Always - 1.
Often - 2.
Sometimes - 3.
Seldom - 4.
Never - 5.

24. Compared to students in other schools, how much do students in this school learn?

They learn a lot more in this school - 1.
They learn a little more in this school - 2.
About the same as in other schools - 3.
They learn a little bit less in this school - 4.
They learn a lot less in this school - 5.

25. How many students in this school will work hard to get a better grade on the weekly tests than their friends do?

Almost all of the students - 1.
Most of the students - 2.
Half of the students - 3.
Some of the students - 4.
Almost none of the students - 5.

26. How many students in this school don't care if they get bad grades?

Almost all of the students - 1.
Most of the students - 2.
Half of the students - 3.
Some of the students - 4.
Almost none of the students - 5.

27. How important do most of the students in this class feel it is to do well in school work?

They feel it is very important - 1.
They feel it is important - 2.
They feel it is somewhat important - 3.
They feel it is not very important - 4.
They feel it is not important at all - 5.

28. How many students in this class think reading is a fun thing to do and read even when they don't have to?

Almost all of the students - 1.
Most of the students - 2.
Half of the students - 3.
Some of the students - 4.
None of the students - 5.

29. How many students in this school make fun of or tease students who get really good grades?

Almost all of the students - 1.
Most of the students - 2.
Half of the students - 3.
Some of the students - 4.
None of the students - 5.

30. How many students in this school don't do as well as they could do because they are afraid other students won't like them as much?

Almost all of the students - 1.
Most of the students - 2.
Half of the students - 3.
Some of the students - 4.
None of the students - 5.

31. If students in this school did not have their work graded by teachers, how many would study hard?

Almost all of the students - 1.
Most of the students - 2.
Half of the students - 3.
Some of the students - 4.
None of the students - 5.

32. If most of the students here could go as far as they wanted in school, how far would they go?

Finish grade school - 1.
Go to high school for a while - 2.
Finish high school - 3.
Go to college for a while - 4.
Finish college - 5.

33. I like to answer questions in class.

Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

34. Things that teachers say about my schoolwork hurt my feelings.

Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

35. I refuse to give up on difficult schoolwork.

Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

36. I am the first one in class to know the answer to a question.
Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

37. I worry about how well I am doing in school.
Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

38. I am upset when I have to talk in front of the class.
Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

39. Teachers like what I say or do in school.
Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

40. I am afraid to ask a teacher to explain something a second time.
Never or almost never - 1.
Sometimes - 2.
Always or almost always - 3.

PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING THE NUMBER TO THE RIGHT OF YOUR BEST ANSWER.

41. When you remember something you heard in class, is it usually
Because you tried hard to remember - 1.
Because the teacher explained it well - 2.

42. Suppose you are showing a friend how to play a game and he has trouble with it. Would that happen
Because he wasn't able to understand how to play - 1.
Because you couldn't explain it well - 2.

43. If a boy or girl tells you that you are bright, is it usually
Because you thought up a good idea - 1.
Because they like you - 2.

44. When you learn something quickly in school, is it usually
Because you paid close attention - 1.
Because the teacher explained it clearly - 2.

45. Suppose you don't do as well as usual in a subject at school. Would this probably happen
Because you weren't as careful as usual - 1.
Because somebody bothered you and kept you from working - 2.

46. When you find it hard to work arithmetic or math problems at school, is it
Because you didn't study well enough before you tried them - 1.
Because the teacher gave problems that were too hard - 2.

APPENDIX 5

TEACHER QUESTIONNAIRE

The information you give us on this questionnaire is completely confidential. No one will see your answers except the members of our research staff. Reports will be made with aggregate data, and no one person will be identified with his or her data. After your questionnaire has been completely coded and punched on IBM cards, your questionnaire will be destroyed. Complete confidentiality is assured. It is very important that you be as candid as possible in your answers. Do not respond to any question that you feel is too "personal" or that you for any other reason prefer to leave unanswered.

1. Please write the name of this school.

____

2. How old are you? ____________________________

3. Are you male or female (circle the number of the correct answer)?

female - 1.
male - 2.

4. What is your race or ethnic group?

Black - 1.
White - 2.
Hispanic - 3.
American Indian - 4.
Asian - 5.

5. How much formal education did your father have?

Some grade school - 1.
Finished grade school - 2.
Some high school - 3.
Finished high school - 4.
Some college - 5.
Finished college - 6.
Attended graduate school or professional school after college - 7.
Don't know - 8.

6. How much formal education did your mother have?

Some grade school - 1.
Finished grade school - 2.
Some high school - 3.
Finished high school - 4.
Some college - 5.
Finished college - 6.
Attended graduate school or professional school after college - 7.
Don't know - 8.

7. What kind of work does/did your father do?

CLERICAL such as bank teller - 1.
CRAFTSMAN such as baker, automobile mechanic, machinist - 2.
FARMER, FARM MANAGER - 3.
HOMEMAKER OR HOUSEWIFE ONLY - 4.
LABORER such as construction worker, car washer, sanitary worker - 5.
MANAGER. ADMINISTRATOR such as sales manager, office manager - 6.
MILITARY such as career officer - 7.
OPERATIVE such as meat cutter, assembler, machine operator, bus or truck driver - 8.
PROFESSIONAL such as clergyman, dentist, physician, accountant, artist, registered nurse but not including school teacher - 9.
PROPRIETOR OR OWNER such as owner of a small business, contractor - 10.
PROTECTIVE SERVICE such as detective, policeman or guard, sheriff, fireman - 11.
SALES such as salesman, sales clerk, advertising or insurance agent, real estate broker - 12.
SCHOOL TEACHER such as elementary or secondary - 13.
SERVICE such as barber, beautician, practical nurse, private household worker, janitor, waiter - 14.
TECHNICAL such as draftsman, medical or dental technician, computer programmer - 15.
NOT WORKING - 16.
Do Not Know - 17.

8. What kind of work does/did your mother do?

CLERICAL such as bank teller - 1.
CRAFTSMAN such as baker, automobile mechanic, machinist - 2.
FARMER, FARM MANAGER - 3.
HOMEMAKER OR HOUSEWIFE ONLY - 4.
LABORER such as construction worker, car washer, sanitary worker - 5.
MANAGER. ADMINISTRATOR such as sales manager, office manager - 6.
MILITARY such as career officer - 7.
OPERATIVE such as meat cutter, assembler, machine operator, bus or truck driver - 8.
PROFESSIONAL such as clergyman, dentist, physician, accountant, artist, registered nurse but not including school teacher - 9.
PROPRIETOR OR OWNER such as owner of a small business, contractor - 10.
PROTECTIVE SERVICE such as detective, policeman or guard, sheriff, fireman - 11.
SALES such as salesman, sales clerk, advertising or insurance agent, real estate broker - 12.
SCHOOL TEACHER such as elementary or secondary - 13.
SERVICE such as barber, beautician, practical nurse, private household worker, janitor, waiter - 14.
TECHNICAL such as draftsman, medical or dental technician, computer programmer - 15.

NOT WORKING - 16.
Do Not Know - 17.

9. How long have you taught school (circle the number of the correct answer)?

Just this year - 1.
1 - 2 years - 2.
3 - 4 years - 3.
5 - 9 years - 4.
10 - 14 years - 5.
15 - or more years - 6.

10. How long have you taught in this school?

Just this year - 1.
1 - 2 years - 2.
3 - 4 years - 3.
5 - 9 years - 4.
10 - 14 years - 5.
15 or more years - 6.

11. What grade level(s) are you teaching:

____

12. How many years have you taught third grade?

____

13. Are you certified in the area in which you are teaching?

Yes - 1.
No. - 2.

14. How many reading courses have you taken?

____

15. How much formal preparation do you have?

Less than a Bachelor's degree - 1.
Bachelor's degree - 2.
Some graduate work but less than Master's degree - 3.
Masters degree - 4.
More than Master's degree but not Doctorate - 5.
Doctor's degree - 6.

16. In your judgment, what is the general reputation of this school among teachers outside the school?

Among the best - 1.
Better than average - 2.
About average - 3.
Below average - 4.
A poor school - 5.

17. In general, how are students in the same grade level assigned to different classes?

Homogeneous grouping according to ability - 1.
Heterogeneous grouping according to ability - 2.
Random grouping - 3.
No intentional grouping - 4.
Other(indicate)________________________________ - 5.

18. In general, how do you group the students within your class?

Homogeneous grouping according to ability - 1.
Heterogeneous grouping according to ability - 2.
Random grouping - 3.
No intentional grouping - 4.
Other(indicate)________________________________ - 5.

19. On the average, what level of achievement can be expected of the students in this school?

Much above national norm - 1.
Slightly above national norm - 2.
Approximately at national norm - 3.
Slightly below national norm - 4.
Much below national norm - 5.

20. On the average, what level of achievement can be expected of the students in your class?

Much above national norm - 1.
Slightly above national norm - 2.
Approximately at national norm - 3.
Slightly below national norm - 4.
Much below national norm - 5.

21. What percent of the students in your class do you expect to complete high school?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

22. What percent of the students in your class do you expect to attend college?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

23. What percent of the students in your class do you expect to complete college?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

24. How many of the students in your class are capable of getting mostly A's and B's?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

25. How would you rate the academic ability of the students in this school compared to other schools?

Ability here is much higher - 1.
Ability here is somewhat higher - 2.
Ability here is about the same - 3.
Ability here is somewhat lower - 4.
Ability here is much lower - 5.

26. What percent of the students in your class would you say want to complete high school?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

27. What percent of the students in your class would you say want to go to college?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

PLEASE REMEMBER, YOUR ANSWERS TO ALL OF THESE QUESTIONS ARE COMPLETELY CONFIDENTIAL. NO ONE BUT OUR RESEARCH STAFF WILL SEE YOUR ANSWERS.

28. How much do you enjoy teaching in this school?

Very Much - 1.
Much - 2.
Average - 3.
Little - 4.
Not at all - 5.

29. What percent of the students in this class do you think the principal expects to complete high school?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

30. What percent of the students in this class do you think the principal expects to attend college?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

31. What percent of the students in this class do you think the principal expects to complete college?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

32. How many of the students in this school do you think the principal believes are capable of getting A's and B's?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

33. How do you think your principal rates the academic ability of the students in this school, compared to other schools?

Rates it much better - 1.
Rates it somewhat better - 2.
Rates it the same - 3.
Rates it somewhat lower - 4.
Rates it much lower - 5.

34. Completion of high school is a realistic goal which you set for what percentage of your students?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

35. Completion of college is a realistic goal which you set for what percentage of your students?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

36 How often do you stress to your students the necessity of a post high school education for a good job/or a comfortable life?

Very often - 1.
Often - 2.

Sometimes - 3.
Seldom - 4.
Never - 5.

37. How many teachers in this school feel that all their students should be taught to read well and master other academic subjects, even though some students may not appear to be interested?

Almost all of the teachers - 1.
Most of the teachers - 2.
About half of the teaches - 3.
Some of the teachers - 4.
None of the teachers - 5.

38. It would be unfair for teachers in this school to insist on a higher level of achievement from students than they now seem capable of achieving.

Strongly agree - 1.
Agree - 2.
Unsure - 3.
Disagree - 4.
Strongly disagree - 5.

39. How many teachers encourage students to seek extra school work so that the students can get better grades?

Almost all of the teachers - 1.
Most of the teachers - 2.
About half of the teaches - 3.
Some of the teachers - 4.
None of the teachers - 5.

40. How many students in your class try hard to improve on previous work?

Almost all of the students - 1.
Most of the students - 2.
About half of the students - 3.
Some of the students - 4.
None of the students - 5.

41. How many students in your class will try hard to do better school work than their classmates do?

Almost all of the students - 1.
Most of the students - 2.
About half of the students - 3.
Some of the students - 4.
None of the students - 5.

42. How many students in your class will seek extra work so that they can get better grades?

Almost all of the students - 1.
Most of the students - 2.
About half of the students - 3.
Some of the students - 4.
None of the students - 5.

43. The parents of students in this school are deeply concerned that their children receive a top quality education.

Strongly agree - 1.
Agree - 2.
Unsure - 3.
Disagree - 4.
Strongly disagree - 5.

44. How many of the parents of students in this school expect their children to complete high school?

Almost all of the parents - 1.
Most of the parents - 2.
About half of the parents - 3.
Some of the parents - 4.
Almost none of the parents - 5.

45. How many of the parents of students in this school expect their children to complete college?

Almost all of the parents - 1.
Most of the parents - 2.
About half of the parents - 3.
Some of the parents - 4.
Almost none of the parents - 5.

46. How many of the parents of students in this school don't care if their children obtain low grades?

Almost all of the parents - 1.
Most of the parents - 2.
About half of the parents - 3.
Some of the parents - 4.
Almost none of the parents - 5.

47. What do you consider to be your primary responsibility to students in your class (circle only one)?

Teaching of academic subjects - 1.
Enhancing social skills and social interaction - 2.
Personal growth and development - 3.
Encouraging education/occupational aspirations - 4.
Other (please specify) ________________________________ - 5.

48. How successful would you say your school has been with regard to student development in the following areas?

A. teaching of academic skills:

Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

B. Enhancing of social skills (social interaction, etc.):

Very successful - 1.
Successful - 2.

Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

C. Personal growth and development (self-reliance, etc.):
Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

D. Educational/occupational aspirations:
Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

49. How responsible do you feel for a student's academic achievement?
Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

50. To what extent do you think that teaching methods affect students' achievement?
They have a great deal of effect on student's achievement - 1.
They have substantial effect on students' achievement - 2.
They have some effect on students' achievement - 3.
They do not have much effect on students' achievement - 4.
They have no effect at all - 5.

51. To what extent do you think teachers' attitudes toward their students affect their students' achievement?
They have a great deal of effect on student's achievement - 1.
They have substantial effect on students' achievement - 2.
They have some effect on students' achievement - 3.
They do not have much effect on students' achievement - 4.
They have no effect at all - 5.

52. How often does the principal and/or other administrators in this school assist and give support to the teachers on ways to improve their students' academic achievement?
Very often - 1.
Often - 2.

Sometimes - 3.
Seldom - 4.
Never - 5.

A. Give an example of such support.

____

____

53. When you are trying to improve your instructional program, how easy or difficult is it to get the principal's assistance?

Very easy - 1.
Easy - 2.
Varies from time to time - 3.
Difficult - 4.
Very difficult - 5.

54. What kind of seating arrangement do you have in your class(es)?

Students always select their own seats - 1.
Generally students select their own seats - 2.
Some students select their seats; some are assigned - 3.
Generally teacher assigns seats - 4.
Teacher always assigns seats - 5.

55. How often do you work with your class as a whole?

Never - 1.
Seldom - 2.
Sometimes - 3.
Often - 4.
Almost always - 5.

56. How often are all of your students working on the same lesson?

Never - 1.
Seldom - 2.
Sometimes - 3.
Often - 4.
Almost always - 5.

57. Do you have a teacher aide?

Yes - 1.
No - 2.

58. Would you prefer to be teaching in another school?

Yes - 1.
No - 2.

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59. How many times in the average day is your intercom used?

None - 1.
1 - 2 times - 2.
3 - 5 times - 3.
6 - 9 times - 4.
10 or more times - 5.

60. How many times in the average day do your receive messages at your door which come from the principal's office?

None - 1.
1 - 2 times - 2.
3 - 5 times - 3.
6 - 9 times - 4.
10 or more times - 5.

61. How much time in an average day do your students spend in reading related activities in class?

______________ minutes

62. How much time in an average day do your students spend in math related activities in the class?

______________ minutes

63. How many days a week do you assign work for your students to do at home?

____

64. How many hours during the period September 1 through December 15, 1982 was your class observed by your principal?

____

65. How many hours during the period September 1 through December 15, 1982 was your class observed by supervisors other than your principal?

____

66. How many parent contacts (notes, calls, conferences, etc.) have you had in the last month?

None - 1.
1 - 2.
3 - 5 - 3.
6 - 10 - 4.
11 - 20 - 5.
20 or more - 6.

67. How many of your students attend class on an average day?

____

68. How many working days were you not in school between September 1 and December 15, 1982?

____

FOR THE FOLLOWING QUESTIONS, PLEASE CIRCLE THE LETTER OF THE APPROPRIATE RESPONSE. SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree.

69. A teacher's highest priority should be the student's self concept.
SA A U D SD

70. A teacher's highest priority should be the student's reading and math achievement.
SA A U D SD

71 Our principal believes that a teacher's highest priority should be the student's self concept.
SA A U D SD

72. Our principal believes that a teacher's highest priority should be the student's reading and math achievement.
SA A U D SD

73. Students in our school are free to create.
SA A U D SD

74. Our school is reasonably quiet and orderly.
SA A U D SD

75. For students to achieve, they must have the freedom to be creative, and creative students need to be able to make noise.
SA A U D SD

76. A school must be relatively quiet and orderly for students to achieve.
SA A U D SD

77. My students are rarely interrupted from their work by outside noises or distractions.
SA A U D SD

78. If the majority of my class does poorly on a test, the poor grades are generally because I did not teach the related concepts well.
SA A U D SD

79. It is impossible to raise the current academic standards of public education.
SA A U D SD

80. I believe I can help each student in my classes to experience success and self worth in some area.
SA A U D SD

81. Some personalities just naturally clash and there is no way a particular student and teacher can get along.
SA A U D SD

82. When I can spend extra time with a slow learner, I soon see positive results.
SA A U D SD

83. A teacher has a great amount of influence on the personality and attitudes of students.
SA A U D SD

84. On days when my class is calm, I know the calmness has nothing to do with my influence.
SA A U D SD

85. I don't feel there is much a teacher can do to influence the standardized test scores of his/her students.
SA A U D SD

86. A child's behavior problem can be adequately modified providing the teacher finds the correct solution.
SA A U D SD

87. Realistically, a teacher can invest time in a particular student to the point of diminishing returns, at which time further instruction is not productive.
SA A U D SD

88. On the whole I am satisfied with myself.
SA A U D SD

89. At time I think I am no good at all.
SA A U D SD

90. I feel that I have a number of good qualities.
SA A U D SD

91. I am able to do things as well as most people.
SA A U D SD

92. I feel that I do not have much to be proud of.
SA A U D SD

93. I certainly feel useless at times.
SA A U D SD

94. I feel that I am a person of worth, at least on an equal plane with others.
SA A U D SD

95. I wish I could have more respect for myself.

SA A U D SD

96. All in all I am inclined to feel that I am a failure.

SA A U D SD

97. I take a positive attitude toward myself.

SA A U D SD

98. Are there any characteristics of this school or its personnel which have particularly helped to make your work as a teacher more effective?

99. Are there any characteristics of this school or its personnel which have particularly helped to make your work as a teacher less effective?

APPENDIX 6

PRINCIPAL QUESTIONNAIRE

THE INFORMATION YOU GIVE US ON THIS QUESTIONNAIRE IS COMPLETELY CONFIDENTIAL. NO ONE WILL SEE YOUR ANSWERS EXCEPT THE MEMBERS OF OUR RESEARCH STAFF. REPORTS WILL BE MADE WITH AGGREGATE DATA, AND NO ONE PERSON WILL BE IDENTIFIED WITH HIS OR HER DATA. AFTER YOUR QUESTIONNAIRE HAS BEEN COMPLETELY CODED AND PUNCHED ON IBM CARDS (WITHOUT YOUR NAME), YOUR QUESTIONNAIRE WILL BE DESTROYED. COMPLETE CONFIDENTIALITY IS ASSURED.

1. Please write the name of this school.

____

2. How long have you been the principal of this school?

Just this year - 1.
1 to 4 years - 2.
5 to 9 years - 3.
10 to 14 years - 4.
15 or more years - 5.

3. How long have you been a principal?

Just this year - 1.
1 to 2 years - 2.
3 to 4 years - 3.
5 to 9 years - 4.
10 to 14 years - 5.
15 or more years - 6.

4. How long did you teach before becoming a principal?

Never taught - 1.
1 to 2 years - 2.
3 to 4 years - 3.
5 to 9 years - 4.
10 to 14 years - 5.
15 or more years - 6.

5. How many reading courses have you taken?

____

6. How many educational administrative courses have you taken?

____

7. Which best describes the location of your school?

In a rural area - 1.
In a residential suburb - 2.
In an industrial suburb - 3.
In a small town (5,000 or less) - 4.
In a city of 5,000 to 50,000 - 5.
In a residential area of a larger city (over 50,000) - 6.
In the inner part of a larger city (over 50,000) - 7.

8. How many families of your students are represented at a typical meeting of the PTA or similar parent group?

We have no parents organization - 1.
Only a few - 2.
Less than half - 3.
About half - 4.
Over half - 5.
Almost all of them - 6.

9. About what is the average daily percentage of attendance in your school?

Over 98% - 1.
97% - 98% - 2.
95% - 96% - 3.
93% - 94% - 4.
91% - 92% - 5.
86% - 90% - 6.
85% or less - 7.

10. What percentage of your students this year are transfers from another school? (Do not count students who had completed the highest grade in the school from which they came.)

0 - 4% - 1.
5% - 9% - 2.
10% - 14% - 3.
15% - 19% - 4.
20% - 24% - 5.
25% or more - 6.

11. What grades are included in your school?

____

12. How many hours per month do you spend advising teachers on matters directly related to student academic progress?

____

13. How many hours per month do you spend advising teachers on other (non-academic) matters?

____

14. How many hours per month do you spend observing classes?

____

15. The principal or other office staff member of this school is in contact with teachers via the intercom as average of ________times a day.

16. The principal or other office staff member of this school is in contact with teachers during class time via other (non_intercom) means such as hand-delivered notes, impromptu meetings, etc. an average of __________ a day.

17. I estimate that the average 3rd grade teacher in my school spends ______ minutes per school day on math related tasks.

18. I estimate that the average 3rd grade teacher in my school spends ______ minutes per school day on reading related tasks.

19. How many working days per year is this schools' average teacher absent from school?

____

20. What percent of students in your school receives free or reduced cost lunches each day?

None - 1.
9% or less - 2.
10% -30% - 3.
31% - 50% - 4.
51% - 70% - 5.
71% - 90% - 6.
More than 90% - 7.
There is no free lunch program - 8.

21. In your judgment, what is the general reputation of this school among educators?

Among the best - 1.
Better than average - 2.
About average - 3.
Below average - 4.
Inferior - 5.

22. With regard to student achievement, how would you rate this school?

Among the best - 1.
Better than average - 2.
About average - 3.
Below average - 4.
Inferior - 5.

23. With regard to student achievement, how good a school do you think this school can be?

Among the best - 1.
Better than average - 2.
About average - 3.
Below average - 4.
Inferior - 5.

24. What do you consider to be the school's primary responsibility to the students?

Teaching of academic subjects - 1.
Enhancing social skills - 2.
Personal growth and development - 3.
Educational/occupational aspirations - 4.
Other (please specify)________________________ - 5.

25. How successful would you say your school has been with regard to student development in the following areas?

A. Teaching of academic skills:

Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

B. Enhancing social skills (social interaction, etc.):

Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

C. Personal Growth and development (self-reliance, etc):

Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

D. Educational/occupational aspirations:

Very successful - 1.
Successful - 2.
Somewhat successful - 3.
Not very successful - 4.
Very unsuccessful - 5.

26. In general, what grouping procedure is practiced across sections of particular grade levels in this school?

Homogeneous grouping according to ability - 1.
Heterogeneous grouping according to ability - 2.
Random grouping - 3.
No intentional grouping - 4.

27. To what extent do the third grade teachers individualize the instructional programs for their students?

All plan individual programs for most students - 1.
Most teachers have some individualized programs - 2.
Individualization varies from teacher to teacher and time to time - 3.
Most teachers have common instructional programs for their students - 4.
All teachers have common instructional programs for their students - 5.

28. In this school, students are assigned to certain classes on the basis of

I.Q. - 1.
Aptitude scores - 2.
Achievement score - 3.
Other (specify)_______________ - 4.
None of the above - 5.

PLEASE ANSWER EACH OF THE FOLLOWING QUESTIONS BY CIRCLING THE NUMBER OF THE CHOICE WHICH MOST NEARLY ANSWERS THE QUESTION FOR YOU.

29. On the average, what achievement level can be expected of the students in this school?

Much above national norm - 1.
Slightly above national norm - 2.
Approximately at national norm - 3.
Slightly below national norm - 4.
Much below national norm - 5.

30. What percent of the students in this school do you expect to complete high school?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

31. What percent of the students in this school do you expect to attend college?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

32. What percent of the students in this school do you expect to complete college?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

33. How many of the students in this school are capable of getting mostly A's and B's?

90% or more - 1.
70% - 89% - 2.
50% - 69% - 3.
30% - 49% - 4.
Less than 30% - 5.

34. How would you rate the academic ability of the students in this school compared to other schools?

Ability here is much higher - 1.
Ability here is somewhat higher - 2.
Ability here is about the same - 3.
Ability here is somewhat lower - 4.
Ability here is much lower - 5.

35. How many of the parents of students in this school expect their children to complete high school?

Almost all of the parents - 1.
Most of the parents - 2.
About half of the parents - 3.
Some of the parents - 4.
Almost none of the parents - 5.

36. How many of the parents of students in this school expect their children to complete college?

Almost all of the parents - 1.
Most of the parents - 2.
About half of the parents - 3.
Some of the parents - 4.
Almost none of the parents - 5.

37. How many of the parents of students in this school don't care if their children obtain low grades?

Almost all of the parents - 1.
Most of the parents - 2.
About half of the parents - 3.
Some of the parents - 4.
Almost none of the parents - 5.

38. Evaluating teachers' performance is an important and often difficult task for principals. When evaluating a teacher's performance, how much importance do you place on his/her students' academic achievement?

It is very important - 1.
It is quite important - 2.
It is somewhat important - 3.
It is not very important - 4.
It is not important at all - 5.

39. As a principal, how much effect do you think you have on students' academic achievement?

Very great effect - 1.
Substantial effect - 2.
Some effect - 3.
Very little effect - 4.
No effect at all - 5.

40. How often do you suggest ways of improving student achievement to your teachers?

Very often - 1.
Often - 2.
Sometimes - 3.
Seldom - 4.
Never - 5.

A. Please give an example of such advice.

____

____

41. How often do you meet with the teachers as a group to discuss ways of improving student achievement?

Very often - 1.
Often - 2.
Sometimes - 3.
Seldom - 4.
Never - 5.

42. To what extent do you think teaching methods affect students' academic achievement?

They have a great deal of effect on student achievement - 1.
They have substantial effect on student achievement - 2.
They have some effect on student achievement - 3.
They do not have much effect on student achievement - 4.
They have no effect at all - 5.

43. To what extent do you think that a teacher's attitude toward his/her students affects students' academic achievement?

They have a great deal of effect on student achievement - 1.
They have substantial effect on student achievement - 2.
They have some effect on student achievement - 3.
They do not have much effect on student achievement - 4.
They have no effect at all - 5.

44. About what proportion of teachers in this school assign seats to their students?

Almost all of the teachers - 1.
Most of the teachers - 2.
About half of the teachers - 3.
Some of the teachers - 4.
Almost none of the teachers - 5.

45. How often are you called out of your building for part or all of a day because of administrative meetings, community events, or other functions?

__________________ a month.

46. What percentage of all the tasks you deal with in a typical week are tasks you originate or think up?

0 - 0.
1% - 2% - 1.
3% - 5% - 2.
6% - 10% - 3.
11% - 25% - 4.
26% - 50% - 5.
51% or more - 6.

47. Who decides which new teacher should be hired by the school board when there's a new position or vacancy in your school?

Principal - 1.
Central office administrator(s) - 2.
Current teachers in your school - 3.
Principal and current teachers in your school - 4.
Principal and central office administrator(s) - 5.
Principal, central office administrator(s), and current teachers in your school - 7.

FOR THE FOLLOWING QUESTIONS, PLEASE CIRCLE THE LETTER OF THE APPROPRIATE ANSWER. SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree.

48. For students to be creative and achieve, a certain amount of noise must be tolerated by the staff.

SA A U D SD

49. For students to achieve, a reasonably quiet and orderly environment must be provided in the school.

SA A U D SD

50. A teacher's highest priority should be the student's self concept.

SA A U D SD

51. A teacher's highest priority should be the student's reading and math achievement.

SA A U D SD

52. Students in our school are free to create.

SA A U D SD

53. Our school is reasonably quiet and orderly.

SA A U D SD

54. Our students are rarely interrupted from their work by outside noises or distractions.

SA A U D SD

55. The parents of students in this school are deeply concerned that their children receive a top quality education.

SA A U D SD

56. If the teachers and other staff members in this school were all doing their job well, nearly all of the students would achieve at grade level.

SA A U D SD

57. It is possible for a principal, with the cooperation of the teachers, to change a low achieving school into a high achieving school.

SA A U D SD

58. If the students of my school do poorly on the State Assessment test, I was not sufficiently involved in seeing that basic skills are taught.

SA A U D SD

59. It is impossible to raise the current academic standards of public education.

SA A U D SD

60. I believe I can help each student in my school to experience success and self worth in some area.

SA A U D SD

61. Some personalities just naturally clash and there is no way a particular student and the principal can get along.

SA A U D SD

62. A principal has a great amount of influence on the personality and attitudes of students.

SA A U D SD

63. On days when my school is calm, I know the calmness has nothing to do with my influence.

SA A U D SD

64. I don't feel there is much a principal can do to influence the standardized test scores.

SA A U D SD

65 A child's behavior problem can be adequately modified providing I find the corract solution.

SA A U D SD

66. Realistically, a principal can invest time in a particular student to the point of diminishing returns, at which time further instruction is not productive.

SA A U D SD

67. On the whole I am satisfied with myself.

SA A U D SD

68. At times I think I am no good at all.

SA A U D SD

69. I feel that I have a number of good qualities.

SA A U D SD

70. I am able to do things as well as most people.

SA A U D SD

71. I feel that I do not have much to be proud of.

SA A U D SD

72. I certainly feel useless at times.

SA A U D SD

73. I feel that I am a person of worth, at least on an equal plane with others.

SA A U D SD

74. I wish I could have more respect for myself.

SA A U D SD

75. All in all I am inclined to feel that I am a failure.

SA A U D SD

76. I take a positive attitude toward myself.

SA A U D SD

77. Are there any characteristics of this school or its personnel which have particularly helped to make your work as a principal more effective?

78. Are there any characteristics of this school or its personnel which have made your work as a principal less effective?

APPENDIX 7

Further Examination of the Relationship Between NTE Scores of Faculty and Student Achievement

A. LSES Phase One

In recent years several states have adopted minimally acceptable levels on the National Teacher Examinations (NTE) as prerequisites for teacher certification (see Piper and O'Sullivan, 1981). This has happened despite the fact that research on the relationship between NTE scores of faculty and student achievement scores is scanty and inconclusive [North Carolina Department of Public Instruction (1981); Piper and O'Sullivan (1981); Strauss and Sawyer (1980)]. Lovelace (1983) is conducting research in Louisiana on the relationship between scores on the NTE and teacher performance.

The relationship between NTE scores of faculty and student achievement was one focus of the first phase of the LSES. The results of this pilot year study were summarized in recent articles by Teddlie, Falkowski, and Falk (1983) and Teddlie, Falk, and Falkowski (1984). In LSES Phase One, it was hypothesized that teachers with higher NTE scores should have students who scored higher on achievement tests.

The results of Phase One confirmed this hypothesized relationship. Schools scoring above the parish average on state assessment tests had faculties with the highest Common and Area scores on the NTE. The scores were as follows:

(1) For schools scoring above average on state assessment tests--faculty's average score on the NTE Common Examination was 564.39 and on the NTE Area Examinations was 613.13.

(2) For schools scoring below average on state assessment tests--faculty's average score on the NTE Common Examination was 534.99 and on the NTE Area Examinations was 586.71.

Pearson product-moment correlations between NTE scores of faculty and scores of students of the Louisiana State Assessment Tests (BSTs) are presented in Table 1. All of the correlations were statistically significant and in the predicted direction: as faculty scores on the NTE increase, so do student scores on the BSTs.

A factor analysis of the LSES Phase One data reported in Table 2 revealed five underlying dimensions among the variables: (1) a socioeconomic dimension including most of the socioeconomic variables plus three variables generally considered to be school characteristics (race of faculty, mean highest degree attained by faculty, and faculty absences); (2) a faculty preparation dimension including average faculty score on the NTE Common Examinations, average faculty

Table 1

Correlation Coefficients Among Faculty NTE Scores and Students LSAP Scores (Third Grade), LSES Phase One*

	NTE Scores	
Louisiana State Assessment Program Scores (Third Grade)	NTE Common Examinations	NTE Area Examinations
Mathematics	.38	.33
Reading	.33	.29
Writing	.41	.28

---

* These data are taken from Louisiana School Effectiveness Study: Phase One, 1980-82 available through the Bureau of Research at the Louisiana State Department of Education. Data were taken from 35 schools in one Louisiana school district.

Table 2

Rotated Factor Matrix[*] Including Socioeconomic and School Variables from Phase One

	FACTORS				
Variables	1	2	3	4	5
POPED	-.49	.33	.15	(.67)	-.06
SIBS	(.73)	-.10	.06	-.27	.27
PCTMNPRO	(.64)	-.25	.33	-.43	.01
PCTFPRO	(-.67)	.43	.01	.37	-.04
STURACE	(.75)	-.31	.15	-.39	.17
FACRACE	(.55)	(-.62)	.15	-.13	.26
NTECOMMON	-.08	(.92)	.07	.05	.09
NTEAREA	.06	(.90)	-.09	.15	.03
FACDEGREE	(-.84)	.19	.27	.16	.08
FACABS	(.87)	.14	-.11	.14	-.18
TOTEXP	-.49	.01	(.68)	.14	.19
TOTSTU	-.23	-.13	.38	(.55)	-.12
STUTEAR	-.06	.07	-.11	(.86)	.19
UNIVGRAD	.36	(-.71)	.14	.06	-.04
PRINNTE	-.17	.10	(-.84)	.04	.05
PRININT	.03	.07	.01	.08	(.93)

---

[*] This factor analysis employed the principal axis technique, with factoring stopping at eigenvalues less than 1.00. The factor loadings reported here are based on a varimax rotation of the unrotated factor matrix.

score on the NTE Area Examination, race of faculty, and passing rate on the NTE of institutions the faculty attended; (3) a principal preparation dimension, composed primarily of the principal's score on the NTE administrator test; (4) a class/school size dimension including student-teacher ratio and total number of students in the school; and (5) a principal style dimension, composed primarily of the principal's interview rating by the central office personnel.

As Table 3 reveals, the faculty preparation factor (which includes average faculty score on the NTE Commons and Area Examination) was a significant predictor of student scores on the Louisiana State Assessment Tests. In the conclusion of Teddlie, Falk, and Falkowski (1984) the authors state:

> Our findings suggest the need to further explore the roles which teacher NTE scores and principal attributes play in determining student achievement scores. These roles may be more important than previously thought. It remains for school effects researchers to more adequately test the relationships which our study has shown to exist.

B. LSES Phase Two Results

While the results from the first phase of the LSES were interesting, they were based on data from only one district. The investigators decided to explore more fully the relationship between faculty NTE scores and student achievement in school in the 12 districts in the second Phase of the LSES. Results from this analysis would be more generalized to Louisiana as a whole.

Before discussing the results from the LSES Phase Two of the study, some comments about problems encountered in dataset construction must be made. The investigators depended on the cooperation of the school district central offices for data on the NTE, since these data are confidential. The central offices made earnest attempts to gather complete and accurate data, but some districts were not as successful as others. Among the problems encountered were the following:

1) One district did not supply the investigators with NTE data despite repeated efforts to collect the information.

2) Data on the NTE from several of the parishes were very incomplete. For instance, one criterion the investigators tried to establish was that a school had to have scores on the NTE for 40 percent of its faculty in order to be included in the dataset. Fewer than half of the schools in the study population met this criterion on the NTE Area scores. The investigators decided not to analyze NTE Area scores because of this missing data problem.

Table 3

Standardized Beta Weights for Five-Factor Regression Models and Variance Explained by Those Models (Phase One Results)

	Mathematics	Reading	Writing
Factor 1	-.46**	-.60***	-.60***
Factor 2	.33*	.29**	.36**
Factor 3	-.26	-.21	-.18
Factor 4	.28*	.37**	.16
Factor 5	-.06	-.23*	-.19
Variance [1] Explained (r^2 by all Five Factors	.4745** [.3840]	.6808*** [.6258]	.5906*** [.5200]

* $p < .05$
** $p < .01$
*** $p < .001$

[1] The first number in each cell is the unadjusted r^2; the number in brackets is the r^2 adjusted for the number of independent variables and the number of cases in the model.

3) While the data on NTE Common scores were more complete, there were also problems with them. For instance only 62 percent of the schools in the study population had faculties for which 40 percent of their NTE scores were known.

Pearson product-moment correlations were run between average faculty score on the NTE Common Examination and scores on the EDS for the study sample. As noted in Table 4, the correlations between faculty score on the NTE Commons Examination and scores on the EDS range from .02 for mathematics to .20 for verbal ability. The correlation for mathematics is so low because there was little variance between schools on the mathematics test. The correlation between NTE score of faculty and EDS equated basic skills scores (which included scores on reading, English, and mathematics, but not verbal ability) was .15. Because of the small number of observations (73), none of the correlations was significant.

The correlations are considerably smaller than those found in the LSES Phase One. The investigators believed that these lower correlations may be the result of missing data, so they repeated the correlation analyses using only schools in which NTE data were available for at least 40 percent of the faculty. The results of this analysis are also found in Table 4. The correlation values were approximately the same as those reported for the full dataset.

The investigators decided to do one further analysis. In this analysis, the individual classroom, rather than the school, was the unit of analysis. Again, the teachers' score on the NTE Common Examination was one of the variables in the correlation analysis. This time, however, the student achievement variables were scores on the Louisiana Basic Skills Tests and the dataset was the study population. These changes were made so that there would be a sufficiently large number of observations to make more reasonable conclusions.

The results of this analysis are found in Table 5, and they point out the volatile nature of the relationship between NTE scores of faculty and student achievement. Over all the districts, the correlation is nonsignificant and quite small. Yet, if one looks at individual districts, one finds some positive (.21, .24, .52) and some negative correlations (-.12, -.24).

C. Comparison of Results from Phases One and Two of the LSES

The results of this analysis of the relationship between NTE scores and student test scores is very different from the results of the LSES Phase One. In the first phase, the investigators found that there was a positive relationship; that is, as the school's facultys' average NTE score increased, so did the school's average score on the third grade State Assessment Test. It must be remembered that this study

Table 4

Correlation Coefficients Among Faculty NTE Common Scores and Student EDS Scores, LSES Phase Two

EDS Scores	NTE Common Scores
Verbal	.20
Reading	.16
English	.18
Mathematics	.02
Basic Skills Scores	.15

Table 5

Correlations Between NTE Common Scores and Louisiana Basic Skills Tests for Phase One of LSES

District	Number of Teachers	Correlation Value With Language Arts	Correlation Value With Mathematics
All Twelve Districts	257	-.06	.02
Selected District 1	53	-.09	-.02
Selected District 2	12	.17	.21
Selected District 3	49	.04	.24*
Selected District 4	66	-.10	-.10
Selected District 5	19	.21	.52**
Selected District 6	21	-.12	.03
Selected District 7	11	-.24	-.09

* $p<.10$
** $p<.05$

was conducted in only one school district. It would have been unwise to attempt to generalize these results to Louisiana as a whole without further examination. Thus this relationship was studied again in the second phase of the LSES, this time in the 12 participating districts.

Results here are mixed. Overall, there is no relationship between NTE scores and student test scores as defined in the LSES. When individual parishes are examined, in some there is a positive relationship (higher NTE scores associated with higher student achievement); in some there is a negative relationship (higher NTE scores associated with lower student achievement); and in the remainder there is no relationship at all. Why are these results so different? We can point to some methodological issues which are certainly related. First, both NTE Common and NTE Area scores were used in the pilot year. Only the Common scores were available for the larger study. It is possible that the relationship is less obvious when only the general portion of the NTE is considered. Second, Louisiana third grade students no longer take the State Assessment Test but take the minimum competency Louisiana Basic Skills Test. These BSTs, by design, have a smaller range of scores. This decreased variance necessarily decreases the potential correlation between teacher and student scores.

Third, since the implementation of the NTE cut-off score, the range of scores of teachers in the public schools of Louisiana has decreased. Those scoring below the cut-off score are less likely to be teaching. It may be that there is little variance in the effect of teachers with passing NTE scores. Perhaps the real differences are between passing and nonpassing teachers. Since the LSES Phase Two study contains another cohort of teachers hired since the implementation of the cut-off scores, it is likely that the percentage of passing teachers has increased. This may be at least a partial explanation of our findings. Fourth, NTE scores were not available for all teachers in the LSES. Some were teaching prior to the NTE requirement and some simply have no scores recorded. We cannot rule out the possibility that the relationship between NTE and student achievement scores was somewhat obscured by gaps in our data.

There is another possible explanation for our mixed results. It is possible that different districts use NTE scores in different ways. Some may not take the teacher's score into consideration when assigning that person to a school. Other districts may assign teachers with high NTE scores to schools in which students score poorly on achievement tests. The philosophy here would be to put those teachers with students having the greatest needs. Yet other districts may station high scoring teachers in schools in which students are achieving at a high level. Here the philosophy would be to place teachers with students who require more challenging presentations. Without an exploration of the hiring and assignment philosophies of districts under consideration, it is very difficult to offer any concrete explanation of this relationship between teachers' NTE scores and their students' achievement.

GLOSSARY*

ADA: Average Daily Attendance.

ANALYSIS OF VARIANCE: A method of identifying, breaking down and testing for statistically significant differences between two or more groups. Some of the differences are due to the research method used, some to error, and some to school practices, etc. Analysis of variance techniques help researchers learn how much of a difference is attributable to each.

BROOKOVER STUDY: A single study presented in the 1979 book: School Social Systems and Student Achievement: School can make a Difference, by W. Brookover et al. Findings about student achievement and the influences upon it concluded that school climate variables significantly contributed to differences in student achievement.

BSTs: Refers to the Louisiana Basic Skills Tests, which are criterion-referenced measures of language arts and mathematics basic skills administered in grades 2-4 (1984) with one grade to be added each year (through grade 12) until 1992.

COLEMAN REPORT: The popular name for the Equality of Educational Opportunity report. In 1964 the U.S. Congress mandated a study of the availability of educational facilities and opportunities for children of different races. In addition to analyzing school resources, James Coleman, the author of the report, also discussed schooling's effect on achievement scores. In doing so, he stated that differences in achievement were related more to differences in children's home background that to differences in educational opportunities.

CRITERION-REFERENCED MEASURE: A test designed to assess individual student achievement in terms of a criterion standard. The measure provides information on a particular student's level of performance, independent of reference to others' performance.

DECISION AGREEMENT: A measure of validity which assesses the extent to which two tests identify the same individuals as both passing or both failing.

DEPENDENT VARIABLE: In experimental design, the dependent variable is the presumed effect of independent variables. Dependent variables are not manipulated but vary concomitantly with changes or variations in the independent variables. The dependent variable is predicted to and the independent variable is predicted from.

EDS: Abbreviation for test scores from the Educational Development Series, Lower Primary S, Special Louisiana Edition published by Scholastic Testing Service; the test specifically designed for use in the Louisiana School Effectiveness Study.

FACTOR: Term used to describe a dimension that is a function of several different variables. Variables which load highly (have large coefficients) on a factor are the most important contributors to that factor. The LSES attempts to find factors associated with school effectiveness.

FACTOR ANALYSIS: Refers to a variety of statistical techniques whose common objective is to describe underlying dimensions or factors.

FACTOR LOADING: A general term referring to a coefficient in a factor pattern. The loading indicates the degree and direction of relationship of the variables within the factor pattern.

INDEPENDENT VARIABLE: See DEPENDENT VARIABLE

INTERACTION: The joint effect of two or more independent variables on the dependent variable, separate from the individual effects of either independent variable.

LDE: Louisiana State Department of Education.

LSAP: Louisiana State Assessment Program.

LSES: PILOT YEAR or PHASE One: Refers to the Louisiana School Effectiveness Study design and pilot phase conducted in 1980-82 in which project instruments were refined and preliminary results were obtained; PHASE TWO: that part of the study conducted in 1982-84 involving 12 school districts and 76 schools.

MAIN EFFECT: The separate effect of one independent variable on the dependent variable, separate from the effects of other independent variables.

NORM-REFERENCED MEASURE: A test designed to evaluate a student's achievement in terms of a comparison between his performance and the performance of other members of the group.

NTE: The National Teacher Examinations, published by Educational Testing Service, designed to test teacher candidates for purposes of certification. The test is comprised of two parts: a general knowledge section called the Commons Examination and the Area Examinations which are concerned with the specific subject area in which the candidate seeks certification.

PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENT: In general, a correlation coefficient is a measure that expresses the extent to which two variables are related. This particular one is appropriate for internal measurements, where equal magnitudes exist between adjacent responses.

REGRESSION ANALYSIS: Mathematical procedures of predicting values of one variable from knowledge of the values of a correlated variable. Multiple Regression specifically involves analyzing the contributions of two or more independent variables to one dependent variable. Stepwise Regression is a specific procedure of regression analysis for entering independent variables one by one on the basis of some pre-established statistical criteria.

SAMPLING FRAME: *Random Sample* is a random selection which requires that every member of a population have an equal chance of being selected in a sample. *Stratified Sample* is the sampling procedure of dividing the population into strata (i.e. black and white, male and female) from which random samples are drawn.

SES: Abbreviation for socioeconomic status; the index of SES used in LSES is a combination of several variables such as occupation and education.

STANINE: These are convenient measures (based on a 9-interval scale with intervals of one-half standard deviation and mid interval set at 5) creating score groups from raw test scores resulting in a normal curve distribution not dependent on a particular score range.

STUDY POPULATION: The total group which is of interest in a research study from which a sample is drawn. For LSES Phase Two, the study population consisted of 270 schools with third grade classrooms from 12 school districts.

STUDY SAMPLE: That sample derived from the study population which in LSES consisted of 76 schools sampled from 270.

UNIVERSE: The population about which statistical inferences are to be made. In LSES this population consisted of all 795 schools in Louisiana with third grade classrooms.

VALIDITY: The extent to which a test or other measuring instrument measures what it was intended to measure. *Construct Validity* is determined by the degree to which certain explanatory concepts or constructs account for performance on a test. *Decision Validity* is the degree to which a test or measure materially aids in deciding on an assignment, treatment or program for the test taker.

VARIMAX ROTATION: A method of orthogonal rotation (a statistical operation) used in factor analysis. Factors obtained through this rotation are by definition uncorrelated.

*NOTE: This glossary was compiled through the use of several publications: *Educational Measurement*, Thorndike; *Foundations of Behavioral Research*, Kerlinger; *California School Effectiveness Study*, C.S.D.E. (1974-75); *Introduction to Factor Analysis*, Kim and Mueller; *Fundamentals of Behavioral Statistics*, Runyon and Haber.

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